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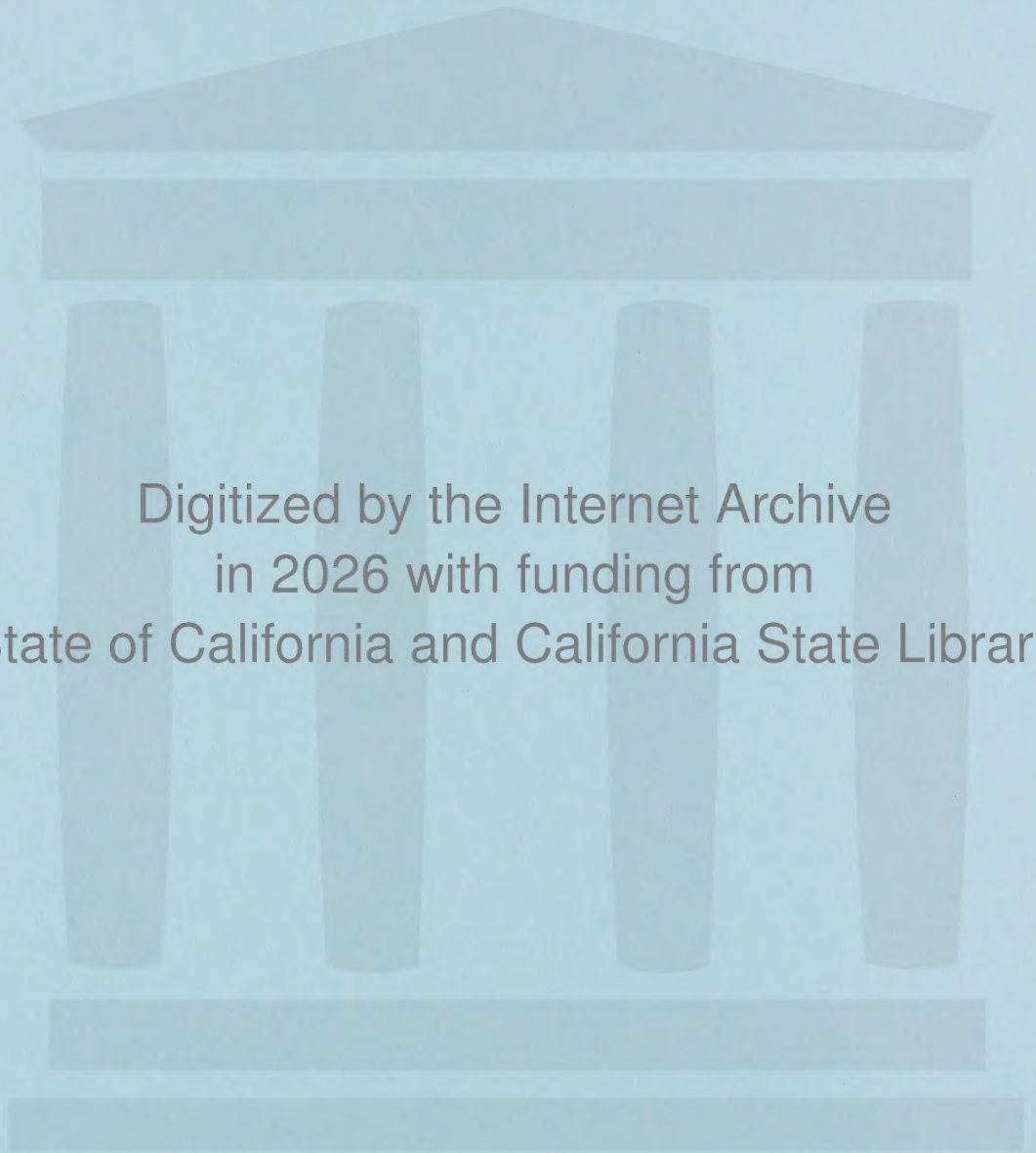
Vallejo General Plan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VALLEJO GENERAL PLAN

July 1999

City Council

Mayor Gloria Exline
Vice Mayor Joanne Schivley
Dan Donahue
Foster Hicks
Raymond Martin
Pamela Pitts
Pete Rey

Planning Commission

Chairperson Richard Evans
Vice Chairperson Mohsen Sultan
Paul L. Beeman
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Kurt Heckman
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David R. Martinez, City Manager
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I. SCOPE AND USE OF THE PLAN

The General Plan is a description of how the City intends to develop. It designates the proposed general distribution, location, and extent of the uses of the land for housing, commerce, industry, open space, educational facilities and other public buildings with a statement describing standards of population and building density for each land use area.

The general location and extent of existing and proposed major thoroughfares, transportation routes, and terminals are closely correlated with the land uses. Environmental constraints, including maintenance of air and water quality, soil and slope conditions, earthquake hazards, noise, vegetation, floodplains and fire hazards are described. Land particularly valuable for park or open space is delineated on the Plan Map with standards for size and location of parks indicated.

The Plan establishes the goals and policies applicable throughout the Vallejo planning area, which includes territory within the City boundaries and lands outside the City limits but within the City's Sphere of Influence.

This Plan was originally adopted by the Vallejo City Council on September 26, 1983. The Plan was revised in 1984 with a new Housing Element, in 1988 with the amendment of text, and in 1987 with amendments to the text, Land Use Map, and the Zoning and Land Use Matrix. In 1990, the City Council adopted the Educational Facilities Element to replace the "Schools" section, the Air Quality Element to replace the "Air Quality" section, and a revised Housing Element. In 1992, the Council amended the Housing Element to comply with the requirements of the California Government Code. In 1994, the "Urban Design", "Agricultural Production", and "Parks" sections of the Plan to include the Tri-City and County Cooperative Plan for Agriculture and Open Space. In 1996, the Plan was amended to reformat its organization, to reflect the adopted White Slough Specific Area Plan required by Assembly Bill 719, and to reflect the closure and reuse of Mare Island Naval Shipyard. This amendment also included some revisions to update the text to reflect adopted City policy.

The complete Plan incorporates the following separate elements: Noise, Open Space-Resource Conservation, Housing, Safety, Scenic Highways, Seismic Safety, Land Use, Circulation, Air Quality, and Educational Facilities. (The Housing Element, Source Reduction and Recycling Element, and Household Hazardous Waste Element are under separate cover. The technical background information for the Seismic Safety and Noise Elements are included in the separate documents Appendix 1and Appendix 2, respectively.)

The General Plan is used as a point of reference by public officials when making decisions on such things as subdivisions, capital improvements, neighborhood rehabilitation and public acquisition. The Plan must be long-range, comprehensive, general and internally consistent. It must be understandable and available to the public because the policies will be carried out only if they have public support.

The Plan serves primarily as a policy document, with each goal area having several policies that work toward achieving the goal. As policies and conditions change, the Plan should be changed. It is recommended that a review of the Plan be undertaken every two years to reflect new constraints and opportunities.

II. SUMMARY OF GOALS, OBJECTIVES AND POLICIES

To facilitate the use of this Plan, the following is a complete summary of the goals, objectives and policies included within this Plan.

LAND USE

Urban Design Goal 1: To establish a strong city identity.

Policies:

1. Use a specific plan and area plans as the development guide for the reuse of Mare Island.

2. Use the Tri-City and County Cooperative Plan for Agriculture and Open Space to evaluate projects proposed within the Cooperative Planning Area.

3. Use the Hiddenbrooke and Northgate Specific Area Plans to evaluate projects proposed within these areas.

4. When proposals for parcels adjoining the Vallejo-Benicia buffer are reviewed, consideration should be given to the impacts on the buffer.

5. Grouping of units in the more buildable areas adjacent to open space areas should be actively encouraged to provide a transition between full land coverage and the open space area.

Urban Design Goal 2: To have within each neighborhood an image, sense of purpose and means of orientation.

Policies:

1. Each neighborhood should have variation in textures of development through variation in dwelling types, in intensities of development and the patterning of uses and open spaces.

2. Recommend that developers use a theme in naming subdivision streets and use special street trees, light standards and other amenities to enhance new neighborhoods.

3. Respect the character of older development nearby in the design of new buildings, including bulk and texture.

Urban Design Goal 3: To have attractive, exciting shopping areas.

Policies:

1. Develop design themes (or theme) that reflect Vallejo's heritage to create a business environment unique to Vallejo.

2. Provide for vigorous enforcement of the Sign Ordinance.

3. Encourage the use of an overlaying theme for a shopping area instead of using unusual structural or trim design for advertising purposes. A coordinated color scheme can be used by existing building groups to harmonize, unify and give distinctive identity in areas where all shapes, sizes, and architectural design of buildings occur in random order.

4. Large parking lots should be buffered from the street and other less intense uses with landscaped berms and/or grade changes.

5. Heavily traveled commercial streets, for example, Sonoma Boulevard, should be landscaped to reduce impact and to provide a sense of enclosure. Utility lines should be placed underground.

Hillside Development Goal: To preserve the natural character of the hillsides for the enjoyment of all.

Policies:

1. Development in hilly areas should be designed to capture views. The development, in turn, should be pleasing to observe from a distance. The appearance of rows along the hillside should be avoided. There should be heavy landscaping to soften manmade features.

2. Retain areas for visual amenities through development controls to protect the ridgeline and provide for site and design review of all development proposals.

    a. Where a designated ridgeline exists, all structures shall be located so that any roof line is a vertical distance of at least sixty (60) feet from such ridgeline, as determined by the Planning Commission.

    b. Where a plateau exists, all structures shall have a setback of at least a hundred (100) feet from the edge of the plateau. For plateaus west of the Carquinez Bridge, setbacks shall be established in accordance with soils reports prepared by registered soils engineers and approved by the City Engineer.

c. *Building on slopes in excess of 10% shall be limited as follows:*

Average Natural Slope	*Units per Acre*
0% - 10%	8.70
11%	8.27
12%	7.83
13%	7.40
14%	6.96
15%	5.53
16%	6.09
17%	5.66
18%	5.22
19%	4.79
20%	4.35
21%	3.92
22%	3.48
23%	3.05
24%	2.61
25%	2.18
26%	1.74
27%	1.31
28%	0.87
29%	0.44
30%	0.00

These allowable density standards are not applicable to Planned Development areas, which are subject to more stringent design standards than conventional zoning districts. Hillside projects in Planned Development areas in which buildings are proposed on average natural slopes in excess of 10% shall be carefully evaluated to insure the enhancement and preservation of the natural topography and character of the hillsides.

d. All development shall be designed to conform to the topography.

e. For the purpose of determining allowed density, the natural slope of the site (as it existed on January 1, 1980) shall be used.

f. The "average slope" of small lots and lots with a relatively even slope across the site can determined by using the following formula:

S = ((T - B) ÷ run) x 100

S = average slope

T = elevation at top of slope

B = elevation at bottom of slope
run = horizontal distance between the top and bottom elevations

g. The "average slope" of lots with an uneven slope across the site before grading can determined by using the following formula:

$$S = (0.00229 \times I \times L) \div A$$

S = average slope
I = contour interval in feet
L = summation of length of the contour lines in scale feet.
A = area of the parcel in acres

3. Identify critical areas for future public acquisition.

4. Wherever possible, building heights shall be limited so as to minimize visual impact on the hillside and as well as interference with existing view corridors.

5. The Hillside Development Guidelines and Grading Ordinance should be followed closely.

6. New development should be designed to take advantage of the existing drainage patterns unless revisions to the topography result in a better development plan.

7. Encourage the use of Planned Residential Development and Mixed Use Planned Development districts in hillside areas to allow more flexibility in design for the enhancement of existing topography and natural resources.

8. Development shall not be allowed on undevelopable land, as that term is defined in the Zoning Ordinance.

9. In hillside areas, residential projects shall be designed so that development is concentrated in those areas with the greatest environmental carrying capacity. Areas with low environmental carrying capacity shall be developed with a very low density or reserved as permanent open space.

10. Hillside developments should add to the quality of life within the City of Vallejo. Public amenities, such as parks, play areas, visual open space, passive recreational open space, scenic roadways and trails through open space areas shall be provided.

11. The City should avoid approving developments that may result in high public maintenance costs.

12. Structures located near ridgelines should blend into the natural topography, exhibit a low profile and roof pitches should be angled to floww the slope.

13. Unique natural features such as rocky outcroppings, watercources, mature vegetation and wildlife shall be preserved.

- **Waterfront Development Goal: To have a waterfront devoted exclusively to water oriented uses, including industrial, residential, commercial and open space uses, that permit public access.**

Policies:

1. BCDC's Public Access Design Guidelines should be used in reviewing all development proposals. In areas hazardous to public safety or incompatible with public use, in-lieu access at another nearby location may be provided.

2. Use the White Slough Specific Area Plan as the protection and development guide for the area consistent with the requirements of Assembly Bill 719.

3. The following public access to and along public waterways, streams and rivers is required where feasible:

   a. Access to the water every 1,500 feet;

   b. Accessway to be a minimum of 50 feet wide;

   c. Access along the water to be a minimum of 200 feet in width;

   d. Planned Developments and commercial and industrial areas may vary provided they are within the intent and purpose of this provision.

4. Residential waterfront developments should be oriented to the water either through park development, marina, or high use facilities, and should have continuous public access.

- **Land Use Compatibility and Density Goal 1: To insure compatibility between residential developments of different densities.**

Policies:

1. Provide buffer zones and utilize other design measures to insure privacy between existing single family residential development and large scale, multi-family development. A medium density buffer between low density and high density developments is an appropriate measure for insuring privacy of low density developments.

2. Multi-family units should be placed so that the major part of the traffic generated by the development does not use roads through a lower density development,

especially on collector streets.

3. Multi-family units should make full use of compatible materials and architectural detail to achieve a sense of scale comparable to the adjoining single family units; such units should, through the site design process, be oriented around a common open space and should, overall, have the same degree of open space area as adjoining single family units.

- **Land Use Compatibility and Density Goal 2: To have a range of residential densities.**

Policy:

Use the following overall densities in determining consistency with the Plan. These densities may be intermixed within the Planned Development districts.

Rural Residential:	0.05 to 0.4 units per acre
Low Density Residential:	0.5 to 8.7 units per acre
Medium Density Residential:	8.8 to 17.4 units per acre
High Density Residential:	17.5 plus units per acre

- **Commercial Development Goal 1: To have an adequate amount of area for each type of commercial development.**

Policy:

Publish an annual report on commercial, residential and industrial development including population and employment projections for use by and to encourage prospective commercial developers.

- **Commercial Development Goal 2: To have the Downtown Commercial Area as a strong focal point for the City and surrounding area.**

Policies:

1. Concentrate in the Downtown specialized cultural, governmental and recreational facilities that will attract people from the entire planning area.

2. Provide a high quality and a relatively high density multi-family residential environment in and adjacent to the Downtown.

3. Promote the development of a pedestrian-oriented environment by:

   - Encouraging the location of parking lots on the fringe of the Downtown adjacent to the major traffic routes.

   - Making the routes for pedestrians as pleasant as possible including midblock walkways, landscaping, benches and rehabilitation of buildings.

   - Reserving ground level floors for retail type uses and upper floors for retail

shops, office and residential uses.

- **Commercial Development Goal 3: To develop the Northeast Quadrant so that it complements the city as a whole.**

  Policies:

  1. Use the Northgate Specific Plan as the development guide to evaluate projects proposed within the Northeast Quadrant.

  2. Consider the feasibility of tying in the office center with a convention center on the Fairgrounds property.

- **Commercial Development Goal 4: To have well-designed large commercial shopping areas serving the needs of the city.**

  Policies:

  1. Require site review for business license changes for target areas.

  2. Provide coordination of land uses and internal circulation between commercial properties in different ownership.

- **Commercial Development Goal 5: To have neighborhood convenience centers to serve new and existing residential areas.**

  Policies:

  1. Neighborhood centers should be approximately one and one-half miles apart, located on major streets.

  2. Sites for neighborhood convenience centers should be approximately 4-8 acres in size and be designed to minimize traffic, noise and other impacts incompatible with residential use.

- **Commercial Development Goal 6: To have healthy commercial strip areas, phasing out those that are poorly situated and no longer suited for commercial use.**

  Policies:

  1. Boundaries of strip commercial areas should be delineated on the Plan Map and the zoning maps to prevent encroachment into unsuitable areas. More detailed maps should be incorporated into neighborhood development plans and specific area plans. In general, those lots not facing a strip commercial street should not be allowed to be developed with a commercial use.

2. The nonconforming use provisions in the Zoning Ordinance should be strictly adhered to, particularly with regard to replacement of a nonconforming use and vacancy of a nonconforming structure.

3. Form a parking district in highly congested areas, e.g., Tennessee Street, and acquire and develop well located lots for parking.

4. Access to businesses on strip commercial streets should be off alleys wherever possible to reduce the number of conflicts with through-traffic. Driveways serving parking lots should be shared to reduce the overall number of driveways.

5. Undertake design studies of the major strip commercial streets and create a distinctive identity to certain parts of the street by having the following policies:

   - Nodes should be developed as focal points along the commercial strips especially where there are a high number of pedestrian oriented retail uses. An example of this is the 900 block of Tennessee Street which serves as the focal point for Tennessee Street west of I-80.

   - Encourage grouping of like activities for better comparison shopping.

- **Industrial Development Goal 1: To maintain Mare Island as an economic asset -- particularly in terms of industrial development -- for the community.**

  Policy:

  Use a specific plan in evaluating new industrial development on Mare Island.

- **Industrial Development Goal 2: To have a higher percentage of residents working in the Vallejo area.**

  Policies:

  1. Review large vacant acreages for potential development; existing industrially zoned areas should not be rezoned unless the zoning is inappropriate.

  2. Develop and keep current information booklets for prospective industrial developers.

- **Industrial Development Goal 3: To insure compatibility between industrial land uses and uses of a lesser intensity.**

  Policies:

  1. Where possible, natural buffers, e.g., railroad tracks, major street, or abrupt topographic changes should be used to delineate industrial areas.

  2. Encourage home occupations compatible with the residential environment.

Industrial Development Goal 4: To maximize the potential of industrially-zoned lands for the fostering of new and innovative industrial development.

Policy:

Use the Planned Development approach in those areas where industrial uses will be compatible with accessory residential and/or commercial uses.

Agricultural Production Goal: To preserve prime agricultural specialty croplands wherever feasible and protect valuable grazing lands.

Policies:

1. Preserve prime agriculture especially croplands and grazing lands through the policies of the Tri-City and County Cooperative Plan for Agriculture and Open Space.

2. Continuation of agricultural uses should be encouraged in Sky Valley and along the easternmost side of Sulphur Springs Mountain through the policies of the Hiddenbrooke Specific Plan.

CIRCULATION AND TRANSPORTATION

Mobility Goal: To have mobility for all segments of the community with a transportation system that minimizes pollution and conserves energy and that reduces travel costs, accidents and congestion.

Policies:

1. When evaluating future expansion of streets and highways, consider incorporation of public transit, bicycle and pedestrian rights-of-way, and distribution of goods and services as a system to maintain the citizenry, rather that as a system devoted solely to the accommodation of the private automobile. (See also the Transit and Non-motorized Transportation sections of this Plan.)

2. All residents, especially the elderly, the handicapped, the young and the low income individual, should be served by the transportation system.

3. The transportation system should not unnecessarily pollute the environment with excessive noise, air pollution, and signing.

4. The toll of deaths and injuries which result from transportation accidents should be kept to a minimum. (See the Traffic Safety section of this Plan.)

5. The time spent in travel should be reduced so that time may be used in more productive and enjoyable ways.

6. Prior to approval of a particular land use, it should be analyzed to determine its

impact on the existing circulation system. (See the Compatibility with Adjoining Land Uses section of this Plan.)

- **Street and Highway System Goal: To have a functional street and highway system that provides appropriate access to the industrial, commercial and residential areas of the city.**

  Policy:

  State Route 37 should be expanded between Diablo Street and the Napa River Bridge as a four-lane divided highway consistent with the requirements of the White Slough Protection and Development Act.

- **Traffic Safety Goal: To have a street and highway system that is safe to use.**

  Policies:

  1. Reduce excessive speeds and amount of traffic in residential neighborhoods through a variety of design techniques, including narrowing of streets or intersections, landscaping, diversion of traffic and closing of streets. Innovative approaches to street design shall be encouraged as an incentive for greater use of the Planned Development approach to land development and neighborhood design.

  2. Wherever possible, residential street layouts should be planned to avoid four-way intersections and oblique intersections. Intersections and driveways on the inside of a curve should be avoided. Turning lanes at heavily traveled intersections should be avoided.

  3. Sight distances should be consistent with probable traffic speed, terrain and alignments. Horizontal and vertical street alignments should relate to the natural contours of the site insofar as is practical and should be consistent with other design objectives. They should be selected to minimize grading quantities. Existing unpaved street rights-of-way too steep for cars or not needed should be abandoned or used to provide landscaping.

- **Compatibility with Adjoining Land Uses Goal: To have a street and highway system that services all land uses with a minimum adverse impact.**

  Policies:

  1. Residential development should not front directly onto expressways or major arterials and should use ornamental masonry walls or solid fencing with landscaping and, if possible, the roadway should be at a lower elevation than the residences. Pedestrian access within such developments should be provided to facilitate use of the transit system.

  2. Where residential development does front on major streets, including major

collectors (exceeding 1,000 ADT), there should be a greater front setback to reduce noise and air pollution impacts. Landscaped median strips can also reduce traffic impact.

3. All truck traffic and regional bus service should be restricted to peripheral major streets and north-south,-east-west arterial and collector streets having the least number of residences and schools. Only small trucks servicing the neighborhood centers should be allowed on other streets. Where possible, unloading facilities should be provided off alleys rather than streets.

4. Street widening should not be approved in existing neighborhoods where there is significant opposition from the immediate residents. Alternative mitigation should be initiated prior to such widening, including modification of street signalization, rerouting of cross town traffic, creating-one-way streets and eliminating on street parking. Street widening should include street planting to give an immediate landscaped appearance.

5. The specifications for streets should be modified to reduce the amount of grading needed to lower construction costs for developers and to reduce the cost of future maintenance.

- **Transit Goal: To have a transit system that results in a significant increase in transit usage especially among commuters and better service for transit dependent residents.**

Policies:

1. Local and regional transit systems should be given a priority equal to that of the private automobile when developing the future street system and when reviewing specific development proposals.

2. Policies for the location of new bus stops should be adopted by the City; developers should be required to put in bus stops as a part of large scale developments.

3. All major community facilities should be made accessible from public transportation; all uses that are, by nature, transit dependent, e.g., senior citizen housing, should be readily accessible to transit.

4. The transit system should be designed to permit safe use by handicapped people.

5. The City should provide reduced rates on the local transit system to commuters (local residents and employees) traveling from their place of residence or employment in Vallejo to the transit centers, such as at Lemon Street and Curtola Parkway, if they show evidence that they will be using a regional mass transit system (bus, ferry or rail).

6. The City should investigate the possibility of providing reduced bridge fares for car and van poolers; local parking requirements of large employers should be reduced if the employer will be providing van pooling and privileged parking for car poolers.

- **Parking Goal: To have the parking need satisfied primarily in well designed off-street**

parking facilities.

Policies:

1. The City should encourage the elimination of on-street parking in the downtown and on major streets throughout the community in order to facilitate traffic movement. Implementation of this policy will depend upon the extent to which off-street parking can be adequately substituted. Reserve close in parking in public lots for short term use.

2. Modify the Zoning Ordinance to permit deferral of required parking spaces with the land to be held in landscaped reserve until such time as the spaces are determined to be needed.

3. Parking of trailers, recreational vehicles and other special purpose limited use vehicles should not be permitted on residential streets, in front yards, or between residences, because of the visual impact and fire hazard.

4. Parking lots should be subject to access easements to allow the City to require connections between parking lots at a future date.

5. Conversion of residential units to commercial use without provision of adequate parking should be limited to only those uses that require little parking or where there is other adequate off-street parking.

Non-Motorized Transportation Goal 1: To have facilities that encourage greater use of bicycles for recreation, commuting and shopping.

Policies:

1. As evidence of the community's desire to encourage healthy and safe alternative modes of travel replacing the auto, the City shall give high priority to implementing the Vallejo Bicycle Route Plan.

2. Provide off-street parking and locking facilities for bicycles in conjunction with automobile parking as well as near entrances to public facilities and in areas of high people use.

3. Follow State Guidelines for signing, striping, and paving of bicycle paths and lanes. Provide tire proof gates over drainage inlets.

4. Realize construction savings by including bicycle rights-of-way in street repair work whenever this is in compliance with the Bicycle Route Master Plan.

5. Expand public safety education programs for automobile drivers and cyclists.

6. Street maintenance including street sweeping on designated bike routes should occur frequently in order to keep streets free of glass, gravel and other debris harmful to cyclists.

- **Non-Motorized Transportation Goal 2: To have safe and pleasant access for pedestrians throughout the community.**

  Policies:

  1. Provide wide sidewalks, plazas, street furniture, street trees, and arcades in intensive shopping areas to increase pedestrian movement and comfort.

  2. Provide safe pedestrian crossing, e.g., signalized crosswalks and pedestrian overpasses, on major streets where day-to-day activities warrant them. Pedestrian walkways should be provided between residential neighborhoods and high use areas such as schools, parks and commercial centers. The walkways should be safe for adjoining property owners and users.

  3. Ramps should be installed in all public facilities and at all sidewalk corners and midblock crossings so that disabled persons may participate more easily in routine community activities. New development should follow the handicapped regulations of the Office of the State Architect (Title 24) and the Americans with Disability Act (ADA).

- **Scenic Highways Goal: To protect and enhance the visual corridors of designated scenic routes.**

  Policies:

  1. Obtain official designation of those routes eligible as Official State Scenic Highways.

  2. Using citizen input, develop specific plans for each proposed scenic route corridor, include standards for special treatment of interest points and standards for well designed street furniture, e.g., light standards, waste bins, that will enhance the corridor.

  3. Coordinate new development along scenic corridors; modify the subdivision ordinance to include requirements for special treatment of subdivisions bordering the corridors. These requirements may include limited access, screening, landscaping, modified road design standards and park strips.

  4. Work closely with Public Works Department and other City departments in developing new standards to insure low maintenance landscaping.

  5. Set a high priority for enforcement of the sign ordinance along scenic corridors. Study the existing sign ordinance to determine the need for change regarding off-site signs.

  6. Adopt a litter control program.

  7. Provide bicycle routes along scenic corridors where there is adequate right-of-way.

  8. Design and provide an official sign for marking scenic corridors.

HOUSING

The Housing Element is under separate cover, but the Goals, Objectives, and Policies are repeated below.

Affordability Goal: On a citywide basis, provide a sufficient number of affordable housing units to meet the needs of current Vallejo residents and to provide a fair share of the market area housing needs.

Objectives:

1. On a citywide basis, increase the number of housing units for persons within the various household income levels to meet the need for additional housing during the 1990-1995 period. This objective is to add the number and percent of housing units to the City's existing housing stock as shown on page 45 of the Housing Element.

2. Obtain federal, state and local government resources as well as private sector resources to meet the objectives above. Local resources will include Redevelopment funds, CDBG monies, and Housing Authority reserves. The objective is to acquire the maximum amount of resources for very low income families, the other half assist low income families. The City expects to increase the number of loans and the number of new affordable units as our programs continue to develop and expand. (See page 45 of the Housing Element.)

3. Preserve and increase the stock of rental and owner-occupied housing, especially housing affordable to low- and moderate-income households. In the event that the 642 units federally-assisted rental units are subject to conversion to market rate housing, establish an intradepartmental task force to consider utilizing the local resources identified in Objective 2 to preserve or replace units.

Policies:

1. Insist on every city in the Bay Area meeting its fair share of the regional need for affordable housing.

2. Encourage and assist in the development of housing that will help meet the objectives for adding new housing citywide at the income levels as outlined above.

3. Seek all available outside resources to help meet its objectives for the provision of housing at the various income levels as outlined on page 45 of the Housing Element.

4. Take an active City role in providing information to local property owners and support the state and federal legislative action that would provide financial incentives to maintain federally-subsidized housing at risk of conversion to market-rate housing.

5. Periodically review development regulations, standards, and fees to ensure that: a) they are not excessive, and b) they are sufficient to finance the cost of infrastructure needed.

6. Encourage the use of planned residential development districts to provide a wide range of densities and housing types through innovative land development.

7. Provide through the Redevelopment Agency affordable housing program for moderate-income first time home buyers.

8. Work cooperatively with local non-profit housing groups such as Vallejo Neighborhood Housing Services, Inc., Solano Affordable Housing Foundation, Mother Lode Housing Development Corporation, HAND, and the Rural California Housing Corporation that provide or maintain affordable housing.

- **Special Needs Goal: On a citywide basis, provide a sufficient number of housing units to meet the special needs of senior citizens, persons that are physically disable or need special medical care, homeless, large families and female heads of households.**

Objectives:

1. On a citywide basis, expand the supply of housing for senior citizens.

2. On a citywide basis, expand the supply of housing accessible to persons that are physically disabled.

3. On a citywide basis, expand the supply of new housing units for large households with lower incomes.

4. On a citywide basis, expand the supply of housing units and/or subsidies available to female headed households.

5. On a citywide basis, expand the supply of housing available to the homeless.

Policies:

1. Encourage development proposals that provide housing for these special needs.

2. Continue to provide development bonuses (not to exceed the General Plan maximum) or other comparable financial incentives for the construction of housing for the elderly, the physically disabled and for the homeless.

3. All residential development shall meet the disabled requirements of the current Title 24 (i.e., one accessible unit for every 100 units or fraction thereof in projects containing more than 20 units).

4. Seek to increase the number of housing units and housing subsidies available to female headed households.

5. The City will explore the implications of revising the Zoning Ordinance to allow variances and other special considerations for handicapped and elderly housing.

- **Housing and Neighborhood Conservation Goal: Conserve the existing housing stock and maintain residential areas as safe, attractive, and diversified neighborhoods with distinct**

identities serving a social and economic mix of residential uses.

Objectives:

1. Review Neighborhood Development Plans.

2. Rehabilitate every dwelling unit that is suitable for rehabilitation. Work with the various housing groups to rehabilitate and conserve as many of the existing homes as possible. The objective is to rehabilitate 30 units annually through the City's loan programs. Encourage the private sector to upgrade additional units.

3. Demolish all dwelling units that cannot be rehabilitated so that hazards will be eliminated and land will become available for new housing. The objective is to demolish at least 20 structures annually.

4. Offer maximum housing rehabilitation assistance to low and moderate income households. This includes Community Development Block Grant (CDBG) funds, redevelopment financing, and other resources.

5. Convert vacant infill land and surplus, vacant non-residential properties to housing where feasible and economically feasible.

6. Replace infrastructure as needed to conserve older neighborhoods. Specific improvements are outlined in the capital improvement budgets of the City of Vallejo and Vallejo Sanitation and Flood Control District.

7. Protect the character of the existing neighborhoods by preserving the existing lot sizes and requiring infill projects to be compatible with the existing neighborhoods.

Policies:

1. Encourage the participation of neighborhood organizations and citizens in decisions on developments and public improvements.

2. Encourage rehabilitation over demolition.

3. Attempt to have demolished units replaced with new units.

4. Actively seek elimination of code violations to correct hazardous conditions.

5. Explore the adoption of a program under state law regarding the elimination of the tax benefits for substandard housing.

6. Review home occupation requirements to ensure that uses are not permitted which might not be compatible with the neighborhood.

7. Demolish hazardous structures at the owner's expense when owners fail to demolish hazardous buildings which cannot be rehabilitated.

8. Attempt to minimize dislocation of people as a result of rehabilitation and demolition.

9. Seek to acquire funding for rehabilitation from CDBG funds, the Redevelopment Agency's 20 percent affordable housing set-aside funds, state funds, and other sources.

10. Encourage infill development by reducing development fees and offering incentives programs.

11. Encourage and help fund activities of non-profit organizations which provide affordable housing.

12. Encourage projects that will increase owner occupancy in the older neighborhoods.

13. Seek a change in state laws on residential care facilities to establish a per capita ceiling.

Balanced Neighborhoods Goal: Develop a balanced residential environment with access to employment opportunities, community facilities, and adequate public and commercial services.

Objectives:

1. Have convenient access to schools, parks, shopping, and transportation for neighborhoods.

2. Develop an identity for neighborhoods.

3. Provide different housing types and different housing densities that are designed to be compatible with surrounding neighborhoods throughout the community.

Policies:

1. Review new developments for completeness and convenience to schools, parks, shopping, transportation, etc..

2. Review the design of new housing projects to prevent impacts on adjacent uses and to assure land use compatibility in the neighborhood.

3. Discourage monotonous, homogeneous sprawl. Developments that offer interesting environments that can create a positive image will be encouraged.

4. Promote a mixture of housing by type and tenure throughout the community.

5. Encourage neighborhood-oriented businesses in vacant nonconforming buildings on a case-by-case basis.

6. Use the Planned Development approach to create neighborhoods with a variety of complimentary and compatible uses which are unified by a common theme.

7. Underscore density bonus programs to encourage a percentage of below-market rate

units in new subdivisions.

- **Housing Choice Goal: Provide within the city a selection of housing by type, tenure and price.**

  Objectives:

  1. Encourage the distribution of housing by type and tenure throughout the community.
  2. Distribute housing subsidies throughout the community.
  3. On a citywide basis, encourage the development of housing at all income levels.
  4. Provide a range of locations for the placement of mobile homes and manufactured housing.
  5. Prevent adverse impacts of condominium conversions.
  6. Provide enough housing alternatives so that persons with different housing needs and different housing preference can get the housing they need/prefer.

  Policies:

  1. Encourage the development and rehabilitation of a wide range of housing types throughout the community.
  2. Ensure that no neighborhood has a disproportionate share of subsidized housing.
  3. As outlined in the Affordability Goal, encourage and promote the development of housing for all income levels, but no one project must provide housing for all income levels.
  4. Allow mobile homes on permanent foundations and manufactured housing where they are architecturally compatible. Such housing will be discouraged in the Bay Terrace and Central City neighborhoods and on lots with more than 10 percent slope.
  5. Closely review condominium conversion applications in terms of their impacts on housing choice, Affordability, and balanced neighborhood goals.

- **Equal Opportunity Goal: Work to eliminate on a citywide basis all unlawful discrimination in housing with respect to age, race, sex, marital status, ethnic background, or other arbitrary factors, so that all persons can obtain decent housing.**

  Objectives:

  1. Eliminate all housing discrimination.
  2. Investigate and resolve cases of reported apparent housing discrimination.

3. Develop awareness in the real estate, development, and financing communities of housing discrimination so that the problem can be more effectively dealt with.

Policies:

1. Take an active role in fighting discrimination.

2. Offer a discrimination referral service.

3. Attempt to resolve tenant / landlord disputes by advising parties of their rights and obligations.

4. Participate in the Fair Housing Resources Board to fight discrimination and promote affirmative marketing.

5. Refuse to do business with any firm or organization that engages in discrimination.

Historic Preservation Goal: Preserve and improve historically and architecturally significant structures and neighborhoods.

Objectives:

1. Develop pride and awareness of Vallejo's heritage, both locally and elsewhere.

2. Assist property owners in the restoration of significant buildings.

3. Protect significant buildings from exterior alterations that would diminish their historic or architectural significance.

4. Prevent the demolition of significant buildings when it is economically feasible to restore them.

Policies:

1. Promote Vallejo's heritage.

2. Assist property owners in their restoration efforts. This includes providing information on preservation resources and assisting in the placement of structures on the National Register of Historic Places.

3. The City will regulate changes in the exteriors of structures in the Heritage District, Historic District, and designated City landmarks to enhance the value of Vallejo's heritage.

4. The City will seek private and public funding for historic preservation.

5. The State Historic Building Code will be used as permitted by state law and the State's Architect's Office on any structure on the Historic Resources Inventory or in the Architectural Heritage and the St. Vincent's Historic Districts.

Continuing Housing Program Goal: Develop and implement a continuing housing program to carry out the Housing Element.

Objectives:

1. Receive sufficient citizen input in the development and implementation of the Housing Element.

2. Implement the goals and objectives of the Housing Element.

3. Update the Housing Element as needed. A new Housing Element will be adopted consistent with state requirements.

Policies:

1. Maintain statistics on housing and population growth, vacant land, and progress made under the objectives of the Housing Element.

2. Participate in federal and state census activities.

3. Continue to work with other local governments and the state and federal governments to coordinate objectives and meet housing needs.

4. Implement the goals and objectives of the Housing Element through the activities of the Housing Action Program.

5. Solicit citizen input in the implementation of the Housing Element.

6. Ensure consistency of the Housing Element with other elements of the General Plan.

EDUCATIONAL FACILITIES

Educational Facilities Goal 1: Insure that the provision of quality education is a priority for every segment of the community.

Policy:

Provide a diversity of quality educational choices within the community for all ages.

Educational Facilities Goal 2: Insure that Vallejo residents have access to educational opportunities, which are a right to be enjoyed without regard to race, creed, color, national origin, sex, or economic status.

Policy:

Continue the ongoing partnership between the City, VCUSD, and GVRD to enhance educational facility planning and implementation.

Educational Facilities Goal 3: Provide adequate facilities to meet existing and future educational needs.

Policies:

1. Reflect the City's commitment to quality education through mechanisms insuring that the rate of growth and the rate of providing new services and facilities are compatible.

2. Continue to provide assistance to VCUSD in site selection, traffic control, circulation, and site acquisition.

3. Amend the Land Use Map, where and when appropriate, to designate new school sites that meet the State and District standards, which are away from incompatible land uses, are part of community parks, and insure the concept of neighborhood schools.

4. Include VCUSD on the City's Technical Project Review Committee for all new residential development.

5. Work with VCUSD to create and maintain a shared data base for planning and forecasting purposes.

6. Consider creating with VCUSD a citywide citizens task force to evaluate and support citywide funding mechanisms.

Educational Facilities Goal 4: Enable the development community to build quality projects in Vallejo while still providing adequate school facilities to serve those new projects.

Policies:

1. Work with VCUSD in the use of innovative financing options, including those which use participation by the community as a whole and by the private sector, which enable the delivery of educational services and facilities to be concurrent with the need.

2. Mitigate to the extent feasible the impact of new residential development on existing and future educational services and facilities.

3. Utilize redevelopment powers and developer participation, where appropriate, to help provide adequate new school facilities and enhanced existing facilities.

4. Consider a program which would allocate the issuance of building permits for new residential units based on the availability of public services, including VCUSD facilities, necessary to serve the new residential development, and which would include an option for new development to mitigate its impact through alternative mechanisms.

5. Place as a condition on all General Plan amendments to residential designations, rezonings to residential classifications, and approvals of residential projects the following or a functional equivalent: *The Developer shall obtain written certification*

from the VCUSD (or show cause why the mitigation proposed by VCUSD should not be required) that the Developer has mitigated the school-related impacts of this project satisfactory to VCUSD. The methods under which the school-related impacts are to be mitigated include, but are not limited to, those methods set forth in the Government Code. This condition shall not be construed as a limitation on VCUSD's choice of legal mitigation alternatives.

PUBLIC FACILITIES AND OTHER SERVICES

Other Services Goal: To provide an efficient and financially sound system of urban services to protect the health, safety and general welfare of Vallejo area residents.

Policies:

1. Encourage infilling, that is, development within the urban area already served by sewer, drainage and water lines, and streets.

2. New development should bear the costs to extend or upgrade public services and/or provide or upgrade public facilities to serve the new development proportionately to the demand generated by the new development. It is recognized that in some instances the City may also participate in the cost to extend public services and/or public facilities to areas in which such services/facilities do not currently exist when the City makes a specific finding that such an extension will benefit the community.

3. Encourage revenue-generating uses on Mare Island to mitigate the costs of improving and maintaining public facilities and services on the Island.

4. Specific plans and Planned Development master plans should identify sites for public uses as required by the needs of the City, GVRD, VCUSD, VSFCD, Solano County and/or permitting state and federal agencies.

5. Prior to annexation to the City, a Specific Area Plan and Environmental Impact Report should be conducted. A cost/revenue impact study should be undertaken to determine the cost of providing public services.

6. Sanitary and Storm Water Systems:

   a. The number of new catch basins with debris traps should be minimized; drainage into wetlands or other sensitive areas should be first channeled through a sedimentation basin.

   b. Subdivision designs should be reviewed to minimize the amount of impermeable surface.

7. Water Service:

a. Landscaping of public facilities should feature drought tolerant species.

b. The City should actively pursue a program to detect and repair water leaks and replace worn water mains.

c. Subdivisions should follow the City's Xeriscaping Guidelines for Model Homes in New Development.

8. Street Maintenance:

a. Reduced street widths with provisions for off-street parking in residential areas should be encouraged to reduce the future maintenance costs.

b. The City should evaluate the street sweeping program and consider special signing and scheduling in congested areas, additional coverage around schools and high litter areas and an educational and enforcement program for litter abatement.

c. Street lighting should be low energy consumptive and agreeable to neighborhood character. Midblock lighting should be reduced where safe to conserve energy and lower lighting costs.

9. Solid Waste Collection:

a. The City should establish programs which encourage recycling of materials and should initiate recycling of materials used during governmental operation.

b. Implement the adopted Source Reduction and Recycling Element and Household Hazardous Waste Element.

10. Fire Services:

a. Special consideration should be taken prior to permitting hazardous occupancies in older buildings.

b. The City should encourage homeowners' improvement associations to participate in the fire prevention program offered by the Fire Department.

11. Police Services:

a. The City should encourage home improvement associations to participate in the Home Alert Program offered by the Police Department.

b. Encourage cul-de-sac street design which has demonstrated a lower rate of crime.

c. Landscape areas should provide adequate visual access to all entrances.

d. Provide street numbers on alleys to allow rapid identification. Encourage the use of lighted house numbers.

e. Defensible design techniques should be encouraged in all new developments.

SAFETY

Seismic Hazards Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.

Policies:

1. Adopt, maintain, review (whenever necessary), and enforce adequate standards and criteria to reduce or avoid all levels of seismic or other geologic risk, whether it be unacceptable, tolerated or avoidable risk.

2. Evaluate all new development for potential seismic hazards using the Geotechnical Hazards Map (Plate 1 in Appendix 1) as a guide for determining the need for additional geologic investigation.

3. Evaluate the compatibility of existing zoning as well as future land use allocation, with known geologic risk zones, or those which may be identified in the future.

4. Recognize the need to provide greater safety for important or critical use structures (such as hospitals, schools, public assembly facilities, dams and utility corridors) through careful site selection, appropriately comprehensive site investigation and enforcement of applicable codes and regulations.

5. Prohibit development of important or critical use structures in any active or potentially active fault zones, unless no other more suitable site can be located, and the site is shown to be safe for the intended use.

6. Advocate improved seismic safety programs for schools and promote greater general public awareness of all types of geotechnical hazards.

7. Improve interjurisdictional cooperation and communication, especially in regard to seismic safety aspects related to dams, reservoirs, state highway and freeway structures, regional fault studies, legislative matters, and disaster response or emergency plans.

8. Advocate improved earthquake insurance programs for the city.

9. Existing and prospective property owners should be made aware of the potential hazards and their implications.

10. Seismic Shaking:

    a. A systematic survey should be conducted to identify those older structures most vulnerable to earthquake damage. Recommended guidelines for determining priorities are included in Appendix 1.

b. There should be continued compliance with Chapter 12.07, Seismic Hazard Identification and Mitigation Program for Unreinforced Masonry Buildings, of the Vallejo Municipal Code.

c. Existing medium and high rise buildings (over three stories) should be evaluated in terms of evacuation procedures and fire control.

d. Vital facilities, including fire and police stations, hospitals and communication centers within the high risk (C or D on Plate 2, Land Use Capability Map, in Appendix 1) zones should be evaluated regarding their compliance with current structural standards for a seismic design. Emergency power generators at these facilities should also be evaluated for seismic safety.

e. At the discretion of the Building Official, certain of the more important or critical use structures in Groups I, II and III (such as hospitals, schools, highrise buildings and fire stations, etc.) should be specified as requiring more conservative seismic design parameters utilizing the maximum credible earthquake (rather than the maximum probable earthquake). Other less important uses in Groups I, II, and III (such as certain utilities, roads, and small isolated dams) could be designed utilizing the maximum probable earthquake, as are the ordinary types of construction in Groups IV and V.

f. Future detailed study of the Southampton Fault should be undertaken, including subsurface exploration between the Garthe Ranch and Blue Rock Springs Creek, geophysical profiling of Southampton Bay and Carquinez Strait to confirm the continuity of the fault zone, microseismic monitoring along the fault, and a triangulation survey of the fault trace to detect possible fault creep.

11. Fault Rupture Potential:

a. At the discretion of the City Engineer or Building Official, all development (or only certain of the more important land uses) within the tentatively classified potentially active fault zones (the Franklin and Southampton Faults) may be required to comply with the State requirements for the evaluation of the fault rupture hazard. The State criteria prohibits construction of habitable structures across such potentially active faults (or multiple fault lines within the zone) and require a minimum setback of 50 feet from such faults, unless specifically approved by a registered geologist. No habitable structures should be placed across or near any fault trace without an adequate construction setback.

b. Future studies of the regional fault hazard, by various governmental agencies or private consultants, may require revision of the delineated special study zones (either enlarging, reducing, or even eliminating all or part of them).

12. Liquefaction Potential: The City should consider for adoption guidelines for evaluating liquefaction potential for critical use structures, such as hospitals. The criteria should include size class, particle diameter, and density of the soil.

13. Tsunamis, Seiches, Potential Inundation from Dam Failure: Routine monitoring of all water storage facilities for leakage or damage is advisable, on a periodic basis,

particularly after an earthquake.

- **Slope Instability Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.**

  Policies:

  1. Require special engineering studies in areas of known slope instability.

  2. Avoid development on known unstable slopes where engineering design cannot ensure a safe living condition.

  3. Identify and appropriately zone areas of unstable soils and/or geologic formations in areas identified as having slopes of over 20% and regulate density and siting in accordance with the natural carrying capacity of the land.

- **Floodplain Hazards Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.**

  Policies:

  1. Require strict compliance with the Flood Damage Protection Ordinance of the City of Vallejo.

  2. In the White Slough area, evaluate all new development, infrastructure improvements, and enhancement projects for consistency with Assembly Bill 719, the White Slough Protection and Development Act.

  3. Evaluate all new developments to determine how peak runoff can be delayed using such measures as detention or retention basins, permanent greenbelt areas, temporary underground storage, permeable paving and roof top ponding.

- **Fire Hazards Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.**

  Policies:

  1. Use the Vallejo Fire Department Master Plan in evaluating all planning proposals.

  2. Actively enforce provisions relating to code violations and insufficient maintenance which may contribute to arson or accidental fires.

  3. Continue irrigated, fire resistant landscape policy in new development.

NOISE

Noise Goal: To provide for a more pleasing acoustic environment for the city by controlling noise levels in a manner that is acceptable to the residents, reasonable for commercial and industrial land uses, and practical to enforce.

Policies:

1. The Police Department should actively enforce speed limits.

2. Roadways should be kept in good repair and new surface material should be evaluated in terms of noise generation.

3. Signals along major roadways should be synchronized for smoother flow of traffic.

4. For properties that back up to a major traffic source such as I-80, noise abatement walls, deeper setbacks, and landscaped berms should be considered.

5. Truck routes should be on streets that are abutted by commercial development and should be well signed.

6. The maximum L_{10} dBA noise levels for exterior and interior environments allowed by zoning district for new construction are shown in Figure 12. The exterior criteria should be applied at the property line and the interior criteria in the room nearest the noise source. The interior criteria will depend upon the noise reduction for the particular building. If the building is not air conditioned, this reduction should be obtainable with the windows open. These criteria will apply to a use being proposed in a high noise area or to a high noise use being proposed anywhere in the City.

7. No person should produce noise that exceeds the ambient noise level (L50) by more than 5 dBA at the nearest property line (Figure 12).

8. Noise from construction and maintenance equipment should be limited to the levels shown in Figure 11.

9. Monitor any proposals to expand the Travis Air Force Base, or the Napa County Airport in terms of increased noise levels in Vallejo.

AIR QUALITY

Air Quality Goal 1: To improve Vallejo's air quality.

Policies:

1. Develop a more balanced transportation system in Vallejo that provides opportunities for non-auto travel through promotion of pedestrian, bicycle and transit modes of travel.

2. Balance jobs and housing in future development to provide Vallejo residents the opportunity to work within Vallejo, and reduce long distance commuting both to and from Vallejo. Jobs and housing should be balanced both in numbers and in salary range/housing cost.

3. Reduce carbon monoxide levels in downtown Vallejo through promotion of Transportation System Management for new development, the promotion of bicycle, pedestrian and transit modes of travel in new downtown development, and signal/road improvements that reduce vehicle idling. New drive-up windows should be discouraged in new development in the central city area unless it can be demonstrated that there will be no net increase in carbon monoxide (CO) emissions.

4. Promote the use of trees and plants in landscaping to reduce air pollutant levels.

5. Encourage local businesses to hire local residents in order to minimize commute trips and vehicle miles traveled in the region.

- **Air Quality Goal 2: To reduce the air quality impact associated with future development in Vallejo.**

Policies:

1. Promote high density development and infill development in those portions of Vallejo served by transit.

2. Promote mixed land use development. The provision of commercial services such as day care, restaurants, banks and stores near to employment centers can reduce auto trip generation by promoting pedestrian travel. Providing neighborhood commercial and park uses within residential developments can reduce short auto trip generation by making pedestrian and bicycle trips feasible.

3. Require air quality mitigation for new development not amenable to TSM methods. Retail commercial and residential development, in particular, do not lend themselves to trip reduction through TSM. As part of the environmental review process these types of uses should be required to provide air quality mitigation by providing funding for off-site improvements to improve air quality. Examples of such improvements are pedestrian/bicycle amenities, transit support, transit amenities such as bus shelters, or additional park-and-ride lots.

4. Use project siting to reduce air pollution exposure of sensitive receptors. Locate air pollution sources away from residential areas and other sensitive receptors. Include buffer zones within residential and sensitive receptor site plans to separate these uses from freeways, arterials, point sources and potential sources of odors.

- **Air Quality Goal 3: To make a contribution towards improving regional air quality.**

Policies:

1. Cooperate with regional air quality planning agencies such as the Bay Area Air

Quality Management District, Metropolitan Transportation Commission, and Association of Bay Area Governments in the development and implementation of regional air quality strategies.

2. Support the expansion and improvement of regional transit systems, ferry systems and regional ridesharing programs.

3. Evaluate the possible implementation of various programs designed to improve air quality such as the creation of "urban forests", and decreasing the use of products which release chloroflourocarbons (CFCs).

4. Encourage energy conservation measures in all new development and energy conserving retrofitting of existing buildings wherever feasible.

NATURAL RESOURCES

Water Resources Goal: To protect the city's water resources against pollution and wasteful use so that it will be available for the city's future needs.

Policies:

1. Retain major drainage swales, particularly those indicated as blue line streams on U.S. Geological Survey Maps.

2. Protect watershed areas, particularly the area north of Lake Herman, in conformance with the policies and ordinances of the City of Benicia.

3. The City should actively encourage conservation of water through reduced per capita consumption.

Fish and Wildlife Resources Goal: To protect valuable fish and wildlife habitats.

Policies:

1. Cluster units so that more open space areas are left in a natural state.

2. Landscape parks, water tank sites, creek channels, and other infrastructure with vegetation associated with the area to mitigate destroyed habitat area.

3. Designate areas valuable for scientific study, such as the Hunter's Hill area, as open space land use.

4. Protect valuable or unique fish and wildlife habitats through control of coastline development, upgrading of effluent levels and requiring use permits for all

development along the critical areas of the Napa Marsh lands.

5. Recognize areas valuable for marine life production, particularly the Napa Marshes and Carquinez Strait, and work with the California Department of Fish and Game and Bay Conservation and Development Commission in insuring the protection of these areas from incompatible uses.

Energy Resources Goal: To reduce the City's dependence on non-renewable energy resources through conservation and development of renewable energy sources.

Policies:

1. Support energy efficient modes of transportation through land use planning, including mixed use development, improved pedestrian and bicycle access, and more compact site planning.

2. Encourage wind and solar energy development.

3. Encourage participation in the PG&E programs for reducing energy consumption.

4. Pursue development of cogeneration, hydroelectric, and wind generation facilities.

5. Housing units should be sited to take advantage of passive solar heating techniques; where this is not possible, overhangs should be required on east, south, and west elevations. Energy and water conservation features should be encouraged.

Mineral Resources Goal: To preserve designated mineral deposits of regional and statewide importance within Vallejo's adopted Sphere of Influence.

Policies:

1. Show the boundary of the designated sector for the Lake Herman Quarry on all maps and development plans that include the area within a minimum of one mile of the sector boundary.

2. Discourage the development of incompatible land uses in and within one-half mile of the designated mineral resource area. These uses include the following: low, medium and high density residential; public facilities such as schools and hospitals; intense light and heavy industrial not related to quarry operations; general commercial; and office.

3. Encourage the development of compatible land uses in and within one-half mile of the mineral resource area. These uses are generally low traffic generators and include the following: rural residential; industrial related to the quarry operations; recreation, such as golf courses; agricultural; and permanent open space.

4. If the designated mineral resource area is annexed to the City of Vallejo, a "Mineral Conservation" overlay zoning district and ordinance and reclamation plan should be implemented by the City.

III. LAND USE

A. VALLEJO'S ROLE IN THE BAY AREA

1. Regional Context

Vallejo is located in the northern part of the San Francisco Bay Area. It is bordered on the west by San Pablo Bay, on the north by the City of American Canyon and unincorporated Napa County, on the east by the City of Fairfield's Sphere of Influence and the City of Benicia, and on the south by the Carquinez Strait and Benicia State Park. Vallejo is 30 miles from San Francisco and 60 miles from Sacramento.

The total area of the incorporated portion of the city is 51.5 square miles. Of this total, 25.4 square miles are mainland, 2.4 square miles are Mare Island, and 23.7 square miles are water or submerged lands. There are approximately 4.4 square miles additional in Vallejo's Sphere of Influence.

2. Historic Role

Accepting an offer of 166 acres of land from General Mariano Vallejo, the newly elected State legislature established the state capital for a very brief period beginning in 1851. Lack of adequate housing and meeting facilities soon ended Vallejo's term as capital.

The importance of Vallejo's waterfront was soon recognized for commercial and military facilities. In 1854, the United States Navy established the first West Coast naval facility on Mare Island. The coming of the railroad to Vallejo in the 1860's spurred a dramatic period of growth that lasted into the mid-1980's. A variety of industries and commercial enterprises kept the city growing at a moderate rate with spurts of growth at the onset of World Wars I and II.

Between 1976 and 1980, Vallejo experienced rapid development, unusual because it was not connected to growth of the Mare Island Naval Shipyard. Large tracts of vacant land, availability of water and sewer capacity, and City policies encouraging growth all provided an impetus for new growth. This growth continued throughout the 1980's with the addition of 9,274 new residential units, along with the development of Marine World/Africa USA and approximately 1.6 million square feet of commercial, industrial, and office space. This is an average of 927 units and 150,000 square feet per year during this ten-year period. The Northgate project, with 2,000 units and 2 million square feet of the commercial and businesses uses, and the Sky Valley project, with 1,400 units clustered around a championship golf course and other recreational uses, were approved. Mare Island's post-war employment also peaked at this time with 15,000 naval and civilian employees in 1989.

In the early 1990's, the growth and economy of the city slowed as it did throughout California and the rest of the nation. The most profound change in Vallejo during this period of time was the decision made in 1993 to close Mare Island by 1996. The closure would not only mean a loss of employment opportunities but a loss of residents as well.

3. Present and Future Role

- Population

  In the past 15 years, Solano County has been one of the major population growth centers in the Bay Area. The Association of Bay Area Governments (ABAG) predicts that Solano will be the fastest growing county in the Bay Area with a 60.6 percent population increase between the years 1990 and 2010. This growth rate is up significantly from the growth rate of 44.7 percent for the period of 1980 to 1990.

  From 1980 to 1994, Vallejo grew at a rate of 44.6 percent. ABAG forecasted that Vallejo's population would increase from 108,600 in 1990 to 126,946 in 1995, which represents a growth rate of 16.9 percent. However, the California Department of Finance estimated Vallejo's population grew from 107,175 as of January 1, 1990 to 112,302 as of January 1, 1996. This represents only a 7.0 percent net increase and does not reflect that the city lost population between 1994 and 1996. Due to the

slow economy, it is not anticipated that the 1997 population estimate will show a significant increase over 1996. With the closure of Mare Island Naval Shipyard, Vallejo's population will likely grow at a much slower rate than it did in years past until reuse is well underway. However, even at a slower growth rate, the amount of developable residential land within the City's Sphere of Influence is likely to be depleted in the next five to ten years.

Vallejo was expected to add 5,000 new households between the years 1990 and 1995, which represents a growth rate of 13 percent. However, due to the slow economy, the actual household growth rate as of January 1, 1995 was 2.3 percent. This difference between population and household rate is believed to be an indication of the increasing trend of expanded families living together in the same home.

- Housing

Residential growth in Vallejo has been the product of rapid population growth during the last fifteen years. From 1980 to 1994, a total of 11,723 units, or an average of 781 units per year, were added to the city's housing stock.

To predict the housing growth between 1990 and 2010, the Planning Division in February 1996 undertook an inventory of the following: (1) approved residential projects that have not received building permits; (2) residential projects in the preliminary or formal application process with the City; and (3) vacant developable and potentially redevelopable residential land within the City's Sphere of Influence. The results of this inventory indicate that approximately 5,800 units could be built on the remaining land in Vallejo.

The first category includes projects with approved tentative subdivision maps, such as Hiddenbrooke, Northgate, and the remainder of the city. There are 3,087 approved units in this group. In the second category, there are approximately 40 units in the City's review process. The third category contains 2,700 potential units. Of this last number, approximately 1,800 units would be the result of infill development and redevelopment activities.

Figure 2

Projected Population and Housing Growth

	Total Population	Housing Units
1980	80,303	30,319
1985	88,846	32,492
1990	107,175	39,593
1995	114,689	41,089
1996	112,302	41,199

2000	127,100	42,100
2005	132,500	44,930

- Employment growth will continue in Vallejo, despite the closure of Mare Island Naval Shipyard. Total employment in the city is expected to grow by almost 19,000 jobs, 60 percent, between 1995 and 2015. ABAG estimates in *Projections 96* that significant increases would occur in all employment sectors, except for agriculture and mining.

Figure 3

Projected Employment Growth in Vallejo Between 1995 and 2015

Sector	Jobs	Change
Agriculture and Mining	- 30	- 30%
Manufacturing and Wholesaling	+ 2,720	+ 89%
Retail	+ 5,240	+ 93%
Service	+ 5,030	+ 51%
Other	+ 5,860	+ 46%
Total	+ 18,820	+ 60 %

B. URBAN DESIGN

1. City Identity

Each City in California has an ultimate physical boundary or "sphere of influence" which has been approved by a County level Local Agency Formation Commission (LAFCO). The main purpose of the LAFCO is to discourage urban sprawl and to encourage the orderly formation and development of cities and special districts. In determining the sphere of influence of each city, several factors are considered, including service capabilities, future population growth, type of development planned for the area and agricultural preserves.

Vallejo is cooperating with the Cities of Fairfield and Benicia and Solano County to

use the spheres of influence to preserve an open space buffer between the three cities. This cooperative planning area is 10,000 acres, and is known as the Tri-City and County Cooperative Planning Area for Agriculture and Open Space. The Conceptual Cooperative Plan has been adopted as an Area Plan amendment to this General Plan. Outside this area, there is the Vallejo-Benicia buffer which separates residential areas in the two cities by an open space buffer that is a minimum of 500 feet in width.

The Sulphur Springs Mountain - Sky Valley area (which includes the Hiddenbrooke project) provides visual amenities to the surrounding communities and opportunities for open space and recreational uses. In addition, this area contains most of the remaining productive agricultural land in the Vallejo region. Development, including recreational uses, and open space in this area have been planned through the adoption of the specific plans for Hiddenbrooke and Northgate.

The western side of the city is bounded by Mare Island which is adjacent to the San Pablo National Wildlife Refuge managed by the U.S. Fish and Wildlife Service. This includes the area known as Cullinan Ranch. This open space boundary provides a permanent and defined entrance for the city for travelers coming from the west along State Route 37.

2. Creating Neighborhoods

The image and character of Vallejo is a composite of several things: the individual neighborhoods, the views and topography, the major streets, waterways and open spaces, and building forms. The pattern created gives a sense of purpose to the city and means of organization and orientation for human activity. It is important that new developments have a recognizable pattern and that the pattern of older neighborhoods be preserved.

3. Business Street Design

The vitality of Vallejo's retail sales areas is affected by physical appearance and accessibility of these areas. Vacant buildings and lots, barren parking lots and stretches of blank wall discourage shoppers from walking to several stores before returning to their autos. Quality shops will not be attracted to the older commercial areas if the buildings, signs, and public improvements are not maintained. It is proposed here that the business community and the City work together to upgrade the business districts and renew the vitality.

Urban Design Goal 1: To establish a strong city identity.

Policies:

1. *Use a specific plan and area plans as the development guide for the reuse of Mare Island.*

2. *Use the Tri-City and County Cooperative Plan for Agriculture and Open Space to evaluate projects proposed within the Cooperative Planning Area.*

3. *Use the Hiddenbrooke, Northgate, and White Slough Specific Area Plans to evaluate*

projects proposed within these areas.

4. *When proposals for parcels adjoining the Vallejo-Benicia buffer are reviewed, consideration should be given to the impacts on the buffer.*

5. *Grouping of units in the more buildable areas adjacent to open space areas should be actively encouraged to provide a transition between full land coverage and the open space area.*

Urban Design Goal 2: To have within each neighborhood an image, sense of purpose and means of orientation.

Policies:

1. *Each neighborhood should have variation in textures of development through variation in dwelling types, in intensities of development and the patterning of uses and open spaces.*

2. *Recommend that developers use a theme in naming subdivision streets and use special street trees, light standards and other amenities to enhance new neighborhoods.*

3. *Respect the character of older development nearby in the design of new buildings, including bulk and texture.*

Urban Design Goal 3: To have attractive, exciting shopping areas.

Policies:

1. *Develop design themes (or theme) that reflect Vallejo's heritage to create a business environment unique to Vallejo.*

2. *Provide for vigorous enforcement of the Sign Ordinance.*

3. *Upgrade the street program in old and new areas to provide a design element.*

4. *Encourage the use of an overlaying theme for a shopping area instead of using unusual structural or trim design for advertising purposes. A coordinated color scheme can be used by existing building groups to harmonize, unify and give distinctive identity in*
areas where all shapes, sizes, and architectural design of buildings occur in random order.

5. *Large parking lots should be buffered from the street and other less intense uses with landscaped berms and/or grade changes.*

6. *Heavily traveled commercial streets, for example, Sonoma Boulevard, should be landscaped to reduce impact and to provide a sense of enclosure. Utility lines should be placed underground.*

C. HILLSIDE DEVELOPMENT

Rolling hillsides provide valuable scenic amenities which can be destroyed through haphazard development. For this reason, many local governments have adopted various restrictions governing the development of areas with steep slopes.

These restrictions range from total prohibition of building on slopes greater than a certain percentage to limiting the density of development, based on the degree of slope. This approach, rather than prohibiting development per se, allows development in keeping with the carrying capacity of the land, as determined on a parcel by parcel basis.

Areas which are generally too steep to support anything except very low density development retain an "open space" character and continue to provide an important visual amenity to more intensive surrounding development. Generally, identifiable ridgelines should be kept in permanent open space, both for their scenic quality and their value as recreational corridors for public use and enjoyment.

The open, rugged slopes of Sulphur Springs Mountain undoubtedly are Vallejo's most outstanding topographic feature and provide an important visual amenity to both residents and visitors passing through the city. From unexpected vistas throughout the city, the mountains provide a feeling of openness and nature in the center of the urban area. Low density development, respecting the natural configuration of the land, and maintenance of an unobstructed ridgeline are essential to the character of the area. Haphazard urban development would not only be ecologically dangerous, but would destroy one of Vallejo's most outstanding features.

The following policies are applicable to hillside areas. Such areas are characterized by steep slopes, unique configurations and outstanding topographic characteristics, providing irreplaceable visual and aesthetic amenities which should be preserved to the greatest extent possible.

Hillside Development Goal: To preserve the natural character of the hillsides for the enjoyment of all.

Policies:

1. *Development in hilly areas should be designed to capture views. The development, in turn, should be pleasing to observe from a distance. The appearance of rows along the hillside should be avoided. There should be heavy landscaping to soften manmade features.*

2. *Retain areas for visual amenities through development controls to protect the ridgeline and provide for site and design review of all development proposals.*

    a. *Where a designated ridgeline exists, all structures shall be located so that any roof line is a vertical distance of at least sixty (60) feet from such ridgeline, as determined by the Planning Commission.*

    b. *Where a plateau exists, all structures shall have a setback of at least one hundred (100) feet from the edge of the plateau. For plateaus west of the*

Carquinez Bridge, setbacks shall be established in accordance with soils reports prepared by registered soils engineers and approved by the City Engineer.

c. *Building on slopes in excess of 10% shall be limited as follows:*

Average Natural Slope	*Units per Acre*
0% - 10%	8.70
11%	8.27
12%	7.83
13%	7.40
14%	6.96
15%	5.53
16%	6.09
17%	5.66
18%	5.22
19%	4.79
20%	4.35
21%	3.92
22%	3.48
23%	3.05
24%	2.61
25%	2.18
26%	1.74
27%	1.31
28%	0.87
29%	0.44
30%	0.00

These allowable density standards are not applicable to Planned Development areas, which are subject to more stringent design standards than conventional zoning districts. Hillside projects in Planned Development areas in which buildings are proposed on average natural slopes in excess of 10% shall be carefully evaluated to insure the enhancement and preservation of the natural topography and character of the hillsides.

d. All development shall be designed to conform to the topography.

e. For the purpose of determining allowed density, the natural slope of the site (as it existed on January 1, 1980) shall be used.

f. The "average slope" of small lots and lots with a relatively even slope across the site can determined by using the following formula:

$$S = ((T - B) \div run) \times 100$$

S = average slope
T = elevation at top of slope
B = elevation at bottom of slope
run = horizontal distance between the top and bottom elevations

g. The "average slope" of lots with an uneven slope across the site before grading can determined by using the following formula:

$$S = (0.00229 \times I \times L) \div A$$

S = average slope
I = contour interval in feet
L = summation of length of the contour lines in scale feet.
A = area of the parcel in acres

3. Identify critical areas for future public acquisition.

4. Wherever possible, building heights shall be limited so as to minimize visual impact on the hillside and as well as interference with existing view corridors.

5. The Hillside Development Guidelines and Grading Ordinance should be followed closely.

6. New development should be designed to take advantage of the existing drainage patterns unless revisions to the topography result in a better development plan.

7. Encourage the use of Planned Residential Development and Mixed Use Planned Development districts in hillside areas to allow more flexibility in design for the enhancement of existing topography and natural resources.

8. Development shall not be allowed on undevelopable land, as that term is defined in the Zoning Ordinance.

9. In hillside areas, residential projects shall be designed so that development is concentrated in those areas with the greatest environmental carrying capacity. Areas with low environmental carrying capacity shall be developed with a very low density or reserved as permanent open space.

10. Hillside developments should add to the quality of life within the City of Vallejo. Public amenities, such as parks, play areas, visual open space, passive recreational open space, scenic roadways and trails through open space areas shall be provided.

11. The City should avoid approving developments that may result in high public maintenance costs.

12. Structures located near ridgelines should blend into the natural topography, exhibit a low profile and roof pitches should be angled to floww the slope.

13. Unique natural features such as rocky outcroppings, watercources, mature vegetation and wildlife shall be preserved.

D. WATERFRONT DEVELOPMENT

A good image of the community is important so that people take pride in living here, so that people elsewhere will enjoy shopping here, and so the area will have a good name as a home address for industries. No single element could do more for the community than the development of handsome waterfronts along the Carquinez Strait, in White Slough, and on both sides of Mare Island Strait.

In addition to City policies, there are other agencies whose jurisdictions affect development along the waterfront.

Bay Conservation and Development Commission (BCDC) has jurisdiction over Carquinez Strait, Mare Island Strait, the Napa River and within a 100-foot band above highest tidal action to the Napa River (State Route 37) Bridge and jurisdiction over Napa River upstream to Cuttings Wharf. Its jurisdiction also extends to the line of highest tidal action in the White Slough area. BCDC requires that new development using the Bay be water-oriented as defined by Title 7.2 of the California Government Code (McAteer-Petris Act which created BCDC). Such uses include ports, bridges, marinas and wildlife refuges. Small amounts of fill may be allowed for these uses only. Minor fills, usually for improving shoreline appearance or providing public access, may be permitted.

Army Corps of Engineers has jurisdiction in all wetlands, navigable waterways and streams contributing to navigable waterways.

State Department of Fish and Game has jurisdiction on all areas the Army Corps of Engineers has as well as all blue line streams (as shown on U.S. Geological Survey maps).

State Lands Commission is tasked by state law to protect tide and submerged lands by restricting development to such traditional public trust uses as ports, fisheries, and water-related recreation, habitat preservation, and open spaces.

1. Carquinez Strait / Glen Cove

The Land Use Map shows that Benicia State Recreation Area, an inlet of the Carquinez Strait, includes the Dillon Point peninsula. The Strait is an unusual feature of State interest in that between the two headlands on the north and south run the waters from half the state, draining all the Sierras and the two great valleys of Central California. The Strait itself is the gateway to the spawning grounds of the

entire Sacramento River system and must be protected against pollution to insure the continued viability of the marine populations.

An open space system includes private areas, trail system and pedestrian access points to adjoining development. A waterfront village in Glen Cove provides a focal point for the entire Glen Cove community and serves visitors to the Benicia State Recreation Area. A small park under the jurisdiction of the Greater Vallejo Recreation District is within close proximity to the village area..

2. Mare Island

Mare Island is characterized by the remarkable extent and quality of its waterfront in terms of industrial, commercial, and historic areas, by its open space and recreation amenities, and by its natural resources. A specific plan will be prepared to describe how these assets will be reused.

3. South Vallejo Industrial Area

The South Vallejo Industrial Area offers good opportunities for water-oriented industry and other heavy industrial uses. From the standpoint of waterfront planning, such an industrial area with the glamour of shopping can itself become a point of interest in the city. The need to provide adequate security may make it difficult to provide public access to the shoreline within this area.

4. Downtown / Marina Vista

In accordance with the Marina Vista Plan, the waterfront adjoining the downtown area is planned as an active recreation oriented mixture of commercial and residential uses. The heart of the city will be brought to the waterfront as it should be in every city on the water. To the north is Vallejo's marina and River Park.

5. San Pablo Bay

Approximately 1,400 acres north of State Route 37 and west of the Napa River, known as Cullinan Ranch, were historically used for agricultural purposes. This area was acquired by U.S. Fish and Wildlife Service for inclusion within the San Pablo National Wildlife Refuge. An additional 70 acres, known as the North Housing and Guadalcanal Village sites, are owned by the City. North Housing will be part of the Mare Island reuse and/or as a wetland mitigation site and Guadalcanal Village may be used as a wetland mitigation site for the improvement of State Route 37.

6. White Slough

The White Slough area has long been a source of concern and sometimes controversy for the Vallejo community, local, federal, state, and regional agencies, and the Bay Area environmental community. The most significant issues have been the improvement of State Route 37, preservation of wetland habitat, and mitigation of flooding, air quality, water quality, and visual impacts. However significant these concerns and controversies have been, most will agree that this area has tremendous value and potential for the community, the Bay Area, and all of California. It was in recognition of this value and potential that Assembly Bill 719, the White Slough Protection and Development Act, was enacted in 1990. This

legislation required the City and Solano County to prepare a specific area plan that addressed the protection and enhancement of habitat value and the improvement of transportation, flood control, and other infrastructure facilities.

The Specific Area Plan was prepared, and it was approved by the City, Solano County, and BCDC. It contains seven interrelated projects: habitat enhancement; State Route 37 improvements; flood control improvements; provision of public access; land use changes; sanitary sewer relocation; and surface street improvements. The SAP also includes development standards to insure the waterfront development around White Slough is oriented to the water.

7. Napa River Waterfront

North of State Route 37 is a widening of the Napa River, commonly referred to as Napa Bay. On the west are marshes and salt ponds under lease to the State as game refuges. On the east is a large area of single family development, none of which has any sense of being near the water. Much of this land is under the jurisdiction of the U.S. Army Corps of Engineers and any development proposals are subject to its approval process. This, together with the new wetlands policy, makes it unlikely that development will continue to the west of the existing and approved single family homes.

Waterfront Development Goal: To have a waterfront devoted exclusively to water oriented uses, including industrial, residential, commercial and open space uses, that permit public access.

Policies:

1. *BCDC's Public Access Design Guidelines should be used in reviewing all development proposals. In areas hazardous to public safety or incompatible with public use, in-lieu access at another nearby location may be provided.*

2. *Use the White Slough Specific Area Plan as the protection and development guide for the area consistent with the requirements of Assembly Bill 719.*

3. *The following public access to and along public waterways, streams and rivers is required:*

   a. *Access to the water every 1,500 feet;*

   b. *Accessway to be a minimum of 50 feet wide;*

   c. *Access along the water to be a minimum of 200 feet in width;*

   d. *Planned Developments and commercial and industrial areas may vary provided they are within the intent and purpose of this provision.*

4. *Residential waterfront developments should be oriented to the water either through park development, marina, or high use facilities, and should have continuous public access.*

E. LAND USE COMPATIBILITY AND DENSITY

1. Insuring Compatibility

Although it is considered desirable to have a diversity of residential units within a given area, this can result in conflicts, especially between owner occupied and rental units. The following policies affecting site planning procedures for multi-family units can mitigate the impact of large scale multi-family residential developments on adjoining single family units.

2. Density Ranges

With respect to residential development, the Land Use Map shows four general areas. These areas are defined by overall density ranges; i.e., the number of residential units per acre. Generally, an overall density range determines whether a specific project within an area is consistent with the Plan. However, if the Planned Development process is employed, portions of the Planned Development area may exceed the allowable density range of the General Plan provided the overall density of the entire Planned Development area does not exceed the General Plan density range, and provided such increased density is approved as part of the master plan for the Planned Development. In addition, a particular project, or a portion thereof, may be less than the overall density range of an area with conventional or Planned Development zoning if consistency with other policies in this Plan so warrants.

For example, assume there is a 22-acre site on the Land Use Map designated "Residential -Medium Density" and zoned "Planned Development Residential". This would indicate an overall density range between 8.8 and 17.4 units per acre, or a total of 194 to 383 units (22 acres x 8.8 units to 22 acres x 17.4 units, respectively). Further, assume that a Planned Development project with 350 units has been approved for the 22 acres. A portion of the area, 14.5 acres, will have 200 units with a density of 13.8 units. The remaining 7.5 acres will have 150 units. Even though this remaining portion would yield 20 units (150 units - 7.5 acres), which is in excess of the 17.4 units per acre, this project density would be permissible and consistent with the Plan because the overall density of the Planned Development area would still not exceed 17.4 units per acre (350 units - 22 acres = 15.9 units per acre).

Another example would be an area located in a hillside area, and designated on the Land Use Map as "Residential - High Density". Assume 17 acres of the area is subject to slides and drainage swales. Due to these environmental constraints, it has been determined the maximum number of units that can be placed on this 17 acres is 100 units or 5.9 units/acre. Although the "Residential - High Density" range calls for more than 17.5 units per acre, this lower density would be consistent with the Plan since the lower density was warranted by other policies in the Plan.

Land Use Compatibility and Density Goal 1: To insure compatibility between residential developments of different densities.

Policies:

1. *Provide buffer zones and utilize other design measures to insure privacy between existing single family residential development and large scale, multi-family development. A medium density buffer between low density and high density developments is an appropriate measure for insuring privacy of low density developments.*

2. *Multi-family units should be placed so that the major part of the traffic generated by the development does not use roads through a lower density development, especially on collector streets.*

3. *Multi-family units should make full use of compatible materials and architectural detail to achieve a sense of scale comparable to the adjoining single family units; such units should, through the site design process, be oriented around a common open space and*
should, overall, have the same degree of open space area as adjoining single family units.

Land Use Compatibility and Density Goal 2: To have a range of residential densities.

Policy:

Use the following overall densities in determining consistency with the Plan. These densities may be intermixed within the Planned Development districts.

Rural Residential:	*0.05 to 0.4 units per acre*
Low Density Residential:	*0.5 to 8.7 units per acre*
Medium Density Residential:	*8.8 to 17.4 units per acre*
High Density Residential:	*17.5 plus units per acre*

F. COMMERCIAL DEVELOPMENT

Commercial development is very important to the economic health of the community. During the 1980's and into the 1990's, the City has strived to enhance the existing commercial areas, such as along Sonoma Boulevard and the downtown area, as well as developed new commercial areas, such as in the Northgate Area and north of State Route 37.

The city has the advantage of an existing and proposed circulation system that makes it a major regional crossroads. The city's current downtown redevelopment project, with its commercial areas, parking and civic center will be a vital factor in the city's ability to capitalize on this advantage. Whether in fact Vallejo does become a dominant commercial center will depend on final analysis upon decisions of private commercial enterprise. The city can, however, create the circumstances which favor the private decisions to locate in the city.

1. Major Commercial Areas

There are six major commercial sites designated on the Plan Map: 1) Downtown; 2) Northeast Quadrant along I-80 between Columbus and Redwood Parkways; 3) Vallejo Plaza area; 4) Tennessee Street between Mare Island Way and Tuolumne

Street intersection; 5) Springs Road between I-80 and Columbus Parkway and 6) Mare Island.

It is proposed that the six major commercial areas described above be delineated as follows:

DOWNTOWN: The historic character will be enhanced. In general, first floor space would be reserved for retail commercial uses and office space would be located on the above floors as it discourages pedestrian shoppers. The retail commercial uses would be primarily specialty stores to be supported by the entire Vallejo trade area. The retail and office uses, together with the Civic Center, would have regional drawing power.

NORTHEAST QUADRANT AREA: The original master plans from the 1970's and early 1980's indicated that a regional commercial center and office complex would be developed in this area. This concept was brought to fruition with the adoption in 1988 of the Northgate Specific Plan which called for the development of a mixed use project. Gateway Plaza, a "power" retail center on 67 acres has been completed. The Northgate area has been planned to provide a pleasing aspect to both residents and people traveling along I-80 and to avoid adverse effects on nearby residential developments. This planning principle should be extended to the development of the remaining undeveloped land within the Northeast Quadrant.

VALLEJO PLAZA AREA: The Plaza has been renovated. Some adjoining vacant land should be reserved for residential use. Strip commercial development along Sonoma Boulevard should be avoided.

TENNESSEE STREET: This strip commercial street should be reserved primarily for auto-oriented uses, except where a climate exists for healthy pedestrian-oriented development, e.g., the 900 block of Tennessee Street. Conversion of existing houses into commercial uses should be done in a manner that is compatible with the original building design.

SPRINGS ROAD: This strip commercial street provides the primary shopping area for the residences east of I-80 and south of Tennessee Street. Merchants should be encouraged to upgrade signs, exterior facades and landscaping. Where suitable land is available, commercial complexes should be encouraged to create focal points.

MARE ISLAND: The reuse of Mare Island should include commercial elements to serve the future Island residents, workers, and visitors.

2. Types of Commercial Development

There are several types of commercial developments: commercial (described in Section 3 below), general commercial, medical service, commercial recreation, and professional office, and planned developments. Within each of these areas, there are several different uses of varying intensity and scale. Because there is such a wide variety in retail commercial development, it is described in a separate section. Location of each individual use should be evaluated in relation to its compatibility with the surrounding land uses, particularly for those uses which require conditional use permits by the Zoning Ordinance.

HEAVY COMMERCIAL uses customarily include buildings materials stores, lumber yards, wholesaling, warehousing and similar heavy uses not requiring central locations and not oriented to pedestrians. Two principal general commercial areas are shown on the Land Use Map, one along Broadway between Redwood and Tuolumne Streets and

one between Sonoma Boulevard and Broadway north of State Route 37. These types of uses also can be found under the "Employment" designation.

MEDICAL SERVICES tend to congregate in special areas in order to provide the wide range of services in a reasonably compact area. Such services include doctors' office with their many specialties, dentists, convalescent hospitals, medical pharmacies, x-ray laboratories, and special testing laboratories. Such groupings are often near a hospital. There are three areas in Vallejo that would fall in this category: the Kaiser Permanente Center on Sereno Drive, Sutter-Solano Hospital off Tuolumne Street, and First Hospital on Broadway.

COMMERCIAL RECREATION is a visitor-oriented commercial development located strategically in relation to highway travelers, but also serving recreation needs. Marine World, motels, restaurants and bowling alleys are examples of appropriate uses. In some cases, the location of recreation facilities may be tied to a particular site. For example, both the waterfront and parts of the Sulphur Springs Mountain area lend themselves to recreational uses in conjunction with natural features.

PROFESSIONAL OFFICES Two types of professional office areas are envisioned in the planning area. One is for low density office activities with modest space and parking requirements. Although such uses are intrinsically compatible with all other uses, they are unique in that they are highly compatible with residential development and should be used as a transition between high intensity commercial areas and residences. Structurally sound residential buildings that are no longer economically viable as homes and nonconforming commercial buildings adjacent to residential uses should be considered for professional office use. The second type of professional office area is for high density office activities on large acreages in outlying locations with good accessibility. Large office complexes with a mixture of such uses as law firms, insurance companies, architects and other related professional or technical businesses would be appropriate as well as home offices for large companies. It is this latter type of use that can be found under the "Employment" designation.

PLANNED COMMERCIAL DEVELOPMENTS are areas in which commercial uses are the principal use. These areas are suitable for creative design and experimental methods of land development. These areas will also facilitate the development or redevelopment of land which is not being utilized due to special circumstances which prevent its development or redevelopment through conventional approaches.

MIXED USE PLANNED DEVELOPMENTS are areas in which a mixture of uses are integrated with each other. Commercial, industrial or residential uses can be primary with other types of uses as secondary. For example, a mixed use planned project can have uses as the focal point with residential or industrial uses as accessory to the commercial. They should be designed to enhance and compliment the commercial component. As with Planned Commercial developments, Mixed Use Planned Developments are for areas suitable for creative design and experimental

methods of land development.

3. Levels of Retail Commercial Development

RETAIL COMMERCIAL uses include shopping centers, such as Vallejo Plaza and Vallejo Corners, the Old Town area of downtown, and small neighborhood centers. These types of uses are generally pedestrian oriented.

There are three levels of retail commercial development considered in the Plan: regional, community, and neighborhood convenience. Figure 4 shows recognized standards for commercial development. (Note: The numbers on this table should be considered approximations.)

Figure 4

Standards for Commercial Centers

	Neighborhood	Community	Regional
Major Functions	Provides convenience goods, personal services.	Provides convenience goods, personal services, professional financial, automobile services, plus limited variety of shopping goods.	Provides limited convenience goods, personal services, professional and business services, plus department, variety and choice of shopping goods.
Number of Stores	4 - 15	20 - 50	50 - 100
Leading Tenants	Food market, drugs, liquor, service stations.	Variety stores, small department stores, apparel stores, food market, drugs.	One or more department stores, variety stores, drugs, apparel, shoes, professional offices.
Distance Apart	1 - 1.5 miles	2 - 2.5 miles	3 - 8 miles
Driving Time	2 - 3 minutes	5 minutes	15 minutes
Site Area	4 - 8 acres	15 - 25 acres	60 or more acres
Population in Area	5,000 - 10,000	25,000 - 50,000	100,000 or more
Parking Requirements	3:1	3:1	3:1
Acres / 1000 Population	9.8	0.9	0.6

A REGIONAL CENTER is a large shopping center with a regional draw. Vallejo's example of such a center is Gateway Plaza and adjacent commercial uses in the Northeast Quadrant. This type of development is known as a power center, with its "big box' retail uses. Other types of regional shopping centers are malls, such as those in Concord, Fairfield, and Richmond, and outlet centers, such as the one in Vacaville.

COMMUNITY SHOPPING CENTERS contain a variety store and usually a small department store. The Vallejo Plaza area is of this magnitude. There are also two

commercial streets, Springs Road, and Tennessee Street, which may develop enough comparison shopping to serve as community shopping facilities.

NEIGHBORHOOD CONVENIENCE CENTERS have a supermarket as the principal store. The Plan Map shows a distribution of existing and proposed neighborhood shopping centers which would adequately serve the residential areas.

4. Strip Commercial Development

An early zoning practice created shallow commercial strips along most highways and major thoroughfares. The types of commercial development can include any of those described above. In many cases there were excessive amounts of commercial zoning and the areas developed in other more realistic uses. Many other areas have not developed at all or development has been spotty, because of expectation of higher commercial values. Vacant land often discourages the maintenance of adjacent properties.

Commercial strip areas frequently suffer from clogged streets, lack of parking and competition with more attractive planned shopping centers that have convenient access and ample parking. These areas affect adjoining property owners adversely and discourage pedestrian shoppers.

Commercial streets expected to remain in healthy and competitive areas are shown as commercial on the Plan Map. For those commercial areas not shown, existing businesses would be expected to remain; however, if a vacancy does occur, other uses which may be detrimental to the area must not be permitted to take their place.

Many of the following policies apply to all types of commercial developments and not just retail commercial. Evaluation of all commercial developments should include review of the following policies, particularly those concerned with site design.

Commercial Development Goal 1: To have an adequate amount of area for each type of commercial development.

Policy:

Publish an annual report on commercial, residential and industrial development including population and employment projections for use by and to encourage prospective commercial developers.

Commercial Development Goal 2: To have the Downtown Commercial Area as a strong focal point for the City and surrounding area.

Policies:

1. *Concentrate in the Downtown specialized cultural, governmental and recreational facilities that will attract people from the entire planning area.*

2. *Provide a high quality and a relatively high density multi-family residential environment in and adjacent to the Downtown.*

3. *Promote the development of a pedestrian-oriented environment by:*

   - *Encouraging the location of parking lots on the fringe of the Downtown adjacent to the major traffic routes.*

   - *Making the routes for pedestrians as pleasant as possible including midblock walkways, landscaping, benches and rehabilitation of buildings.*

   - *Reserving ground level floors for retail type uses and upper floors for retail shops, office and residential uses.*

Commercial Development Goal 3: To develop the Northeast Quadrant so that it complements the city as a whole.

Policies:

1. *Use the Northgate Specific Plan as the development guide to evaluate projects proposed within the Northeast Quadrant.*

2. *Consider the feasibility of tying in the office center with a convention center on the Fairgrounds property.*

Commercial Development Goal 4: To have well-designed large commercial shopping areas serving the needs of the city.

Policies:

1. *Require site review for business license changes for target areas.*

2. *Provide coordination of land uses and internal circulation between commercial properties in different ownership.*

Commercial Development Goal 5: To have neighborhood convenience centers to serve new and existing residential areas.

Policies:

1. *Neighborhood centers should be approximately one and one-half miles apart, located*

on major streets.

2. *Sites for neighborhood convenience centers should be approximately 4-8 acres in size and be designed to minimize traffic, noise and other impacts incompatible with residential use.*

Commercial Development Goal 6: To have healthy commercial strip areas, phasing out those that are poorly situated and no longer suited for commercial use.

Policies:

1. *Boundaries of strip commercial areas should be delineated on the Plan Map and the zoning maps to prevent encroachment into unsuitable areas. More detailed maps should be incorporated into neighborhood development plans and specific area plans. In general, those lots not facing a strip commercial street should not be allowed to be developed with a commercial use.*

2. *The nonconforming use provisions in the Zoning Ordinance should be strictly adhered to, particularly with regard to replacement of a nonconforming use and vacancy of a nonconforming structure.*

3. *Form a parking district in highly congested areas, e.g., Tennessee Street, and acquire and develop well located lots for parking.*

4. *Access to businesses on strip commercial streets should be off alleys wherever possible to reduce the number of conflicts with through-traffic. Driveways serving parking lots should be shared to reduce the overall number of driveways.*

5. *Undertake design studies of the major strip commercial streets and create a distinctive identity to certain parts of the street by having the following policies:*

   - *Nodes should be developed as focal points along the commercial strips especially where there are a high number of pedestrian oriented retail uses. An example of this is the 900 block of Tennessee Street which serves as the focal point for Tennessee Street west of I-80.*

   - *Encourage grouping of like activities for better comparison shopping.*

G. INDUSTRIAL DEVELOPMENT

There are usually two levels of industrial development, light and heavy industry, that are classic examples of uses that fall under the "Employment" designation. These uses produce jobs. Generally, heavy industrial uses are those with higher noise, odor, air pollution levels, create a substantial amount of traffic congestion or put a heavy demand on the sewage treatment plant. Examples would include a brewery, cement plant and oil refinery.

Light industrial uses are inherently cleaner and are generally more compatible with less intense uses such as residential. Examples would include wholesale operations,

warehousing, and manufacturing of electrical products.

More recently cities have been encouraging the development of business-industrial parks. The purpose of the industrial park zone is to provide an area that is appropriate for the industrial development and that is coordinated with surrounding and internal uses. Business parks typically have a mix of commercial and industrial uses. The Northgate Business Park is in this category.

Typically, an industrial park zone will have a development plan for an entire site showing subdivision of land and in some cases placement of buildings. Specific performance standards usually reference state and federal requirements. Such zones generally have more stringent aesthetic standards including landscaping and open space and building design. Uses other than industrial are better regulated and can be timed and located to best serve the park.

Although industrial "pockets" are scattered throughout the city, there are three primary areas of the city where industrial uses are concentrated: Mare Island, South Vallejo, and Northgate.

Mare Island Naval Shipyard closed in 1996 as a naval facility. This closure could have a significant impact on industrial activity in Vallejo and the region. However, the Mare Island Futures Project was established by the City in August 1993 when the closure decision was made. The Project's Work Group developed the Mare Island Final Reuse Plan outlining the reuse goals and standards for the island to insure its immediate, mid-term, and long-term viability as an economic asset to the community.

The South Vallejo industrial area is within a redevelopment area, and has good water, rail and freeway access. The area is zoned as a Planned Development area and uses the South Vallejo
Industrial Park Plan as the development master plan. Several industrial uses, including Meyer Cookware with a 170,000 square-foot facility, are located within the area.

The Northgate Business Park is approximately 100 acres with good access from Interstate 80 via Columbus Parkway. The Northgate Specific Area Plan details the types of uses and the development standards, but the intent is to attract large users with quality projects.

Although not usually identified as a significant employment resource, home occupations can provide an opportunity to many who would otherwise be forced to commute to work. The home occupation as defined in the Zoning Ordinance is any activity of a nonresidential nature carried on in one's home and which clearly is secondary to the residential use. It may be handcrafted products, practicing an art, offering a service or conducting a business. Guidelines for home occupations insure their compatibility with the residential environment.

Figure 5

Occupations of Persons over 16

1980	1990	Change	Category

18.6%	23.6%	+26.9%	Executive, managerial, professional
24.7	24.4	- 1.2	Technicians, support, clerical
21.5	16.9	-21.4	Manufacturing, assemblers, crafts
10.0	10.8	+ 8.0	Sales
4.8	4.8	0.0	Handlers, laborers, private household
3.8	3.3	-13.2	Transportation, material moving
2.1	2.4	+14.3	Protective service
1.1	1.1	0.0	Farming, forestry, fishing
13.4	12.7	- 5.2	Other service

Industrial Development Goal 1: To maintain Mare Island as an economic asset -- particularly in terms of industrial development -- for the community.

Policy:

Use a specific plan in evaluating new industrial development on Mare Island.

Industrial Development Goal 2: To have a higher percentage of residents working in the Vallejo area.

Policies:

1. *Review large vacant acreages for potential development; existing industrially zoned areas should not be rezoned unless the zoning is appropriate.*

2. *Develop and keep current information booklets for prospective industrial developers.*

Industrial Development Goal 3: To insure compatibility between industrial land uses and uses of a lesser intensity.

Policies:

1. *Where possible, natural buffers, e.g., railroad tracks, major street, or abrupt topographic changes should be used to delineate industrial areas.*

2. *Encourage home occupations compatible with the residential environment.*

Industrial Development Goal 4: To maximize the potential of industrially-zoned lands for the fostering of new and innovative industrial development.

Policy:

Use the Planned Development approach in those areas where industrial uses will be compatible with accessory residential and/or commercial uses.

H. AGRICULTURAL PRODUCTION

Agricultural lands provide for managed resource production through the provision of food and fiber, while retaining an essentially open visual character which enhances the aesthetic quality of the environment.

Agricultural lands are generally classified by the capability of the soils, climate, and management problems. The classification contains two general divisions: (1) land suitable for cultivation and other uses, and (2) land limited in use and generally not suited for cultivation. Each of these broad division has four classes. The hazards and limitations in use increase as the class number increases; therefore, Class I has few hazards or limitations, or none; whereas, Class VIII has a great many.

Vallejo has no Class I lands. The city has an abundance of grazing lands and other higher numbered soil types, which are not considered critical within its Sphere of Influence. A large portion of the City's most valuable agricultural lands has been preempted by urban development. Measures should be undertaken to protect those remaining lands to insure their continued agricultural productivity.

Agricultural Production Goal: To preserve prime agricultural specialty croplands wherever feasible and protect valuable grazing lands.

Policies:

1. *Preserve prime agriculture especially croplands and grazing lands through the policies of the Tri-City and County Cooperative Plan for Agriculture and Open Space.*

2. *Continuation of agricultural uses should be encouraged in Sky Valley and along the easternmost side of Sulphur Springs Mountain through the policies of the Hiddenbrooke Specific Plan.*

I. COMPATIBILITY STANDARDS FOR LAND USE DESIGNATIONS

- RURAL RESIDENTIAL

  The density for this designation is less than 0.5 units per acre. It is characterized by rural, single family development on parcels that are at least one-half acre in size. Agriculture and other open space uses and supporting public services are typical as well.

  Clearly compatible zoning classifications:

  RR - Rural Residential
  RC - Resource Conservation
  PDR - Planned Development Residential

PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classification:

MUPD - Mixed Use Planned Development

- LOW DENSITY RESIDENTIAL

The density range for this designation is 0.5 to 8.7 units per acre. It is characterized by typical suburban development with detached or attached housing on individual lots. Examples of this type of development are single family subdivisions, duets, zero-lot lines, courtyard clusters, patio homes, and townhouses.

Clearly compatible zoning classifications:

LDR - Low Density Residential
PDR - Planned Development Residential
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

MDR - Medium Density Residential
RR - Rural Residential
CN - Neighborhood Commercial
MUPD - Mixed Use Planned Development

- MEDIUM DENSITY RESIDENTIAL

The density range for this designation is 8.8 to 17.4 units per acre. It is characterized by attached or detached units, such as duets, zero-lot lines, townhouses, condominiums, and apartments. This designation is found in the more urban areas of the community or where the clustering of units is desirable for design variety and/or environmental preservation.

Clearly compatible zoning classifications:

MDR - Medium Density Residential
PDR - Planned Development Residential
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

LDR - Low Density Residential
HDR - High Density Residential
RR - Rural Residential
CN - Neighborhood Commercial
LO - Limited Office
MUPD - Mixed Use Planned Development

- HIGH DENSITY RESIDENTIAL

The density for this designation is more than 17.4 units per acre. It is characterized

by multi-family development, such as condominiums and apartments. It is typically found next to more intensive urban services and uses, such as arterials and collector streets and commercial areas.

Clearly compatible zoning classifications:

HDR - High Density Residential
PDR - Planned Development Residential
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

MDR - Medium Density Residential
CN - Neighborhood Commercial
LO - Limited Office
M - Medical
PDC - Planned Development Commercial
MUPD - Mixed Use Planned Development

- GENERAL COMMERCIAL

There are several types of commercial and office development included in this broad designation. They are retail (shopping centers, personal services), heavy (home improvement centers, wholesale stores), recreation, and limited professional (finance, real estate). The intent of this designation is to provide areas of the city where goods and services are available to local residents as well as visitors from the region and beyond.

Clearly compatible zoning classifications:

CN - Neighborhood Commercial
CL - Linear Commercial
CP - Pedestrian Shopping and Service
LO - Limited Office
PDC - Planned Development Commercial
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

MDR - Medium Density Residential
HDR - High Density Residential
IU - Intensive Use
LIU - Limited Intensive Use
PDI - Planned Development Industrial
MUPD - Mixed Use Planned Development

- HIGHWAY COMMERCIAL

This designation includes uses that are specifically oriented to the travelling public on Interstate 80 and 780 and State Route 37, such as service stations and motels.

Clearly compatible zoning classifications:

CF - Freeway Commercial
PDC - Planned Development Commercial
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

MDR - Medium Density Residential
HDR - High Density Residential
CN - Neighborhood Commercial
CL - Linear Commercial
IU - Intensive Use
LIU - Limited Intensive Use
LO - Limited Office
PDC - Planned Development Commercial
MUPD - Mixed Use Planned Development

- WATERFRONT COMMERCIAL

This designation includes uses that are oriented to waters such as the Carquinez Strait, Mare Island Strait, Napa River, White Slough, and San Pablo Bay. Typical uses include terminals, marinas and other recreation, boat repairs, and visitor-serving facilities.

Clearly compatible zoning classifications:

CW - Waterfront Commercial
PDC - Planned Development Commercial
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

IU - Intensive Use
LIU - Limited Intensive Use
LO - Limited Office
PDR - Planned Development Residential
PDI - Planned Development Industrial
MUPD - Mixed Use Planned Development

- MEDICAL COMMERCIAL

This designation includes uses such as medical centers and supporting services that are typically found clustered around these centers.

Clearly compatible zoning classifications:

M - Medical
PO - Professional Office
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classification:

HDR - High Density Residential

- EMPLOYMENT

This broad designation is characterized by uses that generate significant numbers of jobs. Typical uses include heavy industrial, light industrial, research and development, warehouse, distribution, heavy commercial, and large scale office. It is generally located adjacent to highways and other arterials and away from -- either physically and/or visually -- less intensive uses.

Clearly compatible zoning classifications:

IU - Intensive Use
LIU - Limited Intensive Use
PO - Professional Office
PDI - Planned Development Industrial
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

HDR - High Density Residential
CN - Neighborhood Commercial
CF - Freeway Commercial
LO - Limited Office
PDC - Planned Development Commercial
MUPD - Mixed Use Planned Development

- OPEN SPACE - AGRICULTURAL CONSERVATION

This designation includes the eastern hillsides where agricultural uses, such as cattle grazing, are common and where open space is being preserved for such uses and for recreation activities such as hiking and horseback riding.

Clearly compatible zoning classifications:

RR - Rural Residential
RC - Resource Conservation
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

PDC - Planned Development Commercial
PDI - Planned Development Industrial
MUPD - Mixed Use Planned Development

- OPEN SPACE - URBAN RESERVE

This designation is meant for areas of open space that may be used in the future for public or quasi-public uses.

Clearly compatible zoning classification:

PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

RR - Rural Residential
PDC - Planned Development Commercial
PDI - Planned Development Industrial
MUPD - Mixed Use Planned Development

- OPEN SPACE - WETLANDS

This designation is for areas that are currently wetlands or have been planned for conversion to wetlands.

Clearly compatible zoning classifications:

RC - Resource Conservation
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

RR - Rural Residential
(continue to next page)
CN - Neighborhood Commercial
CW - Waterfront Commercial

- OPEN SPACE - COMMUNITY PARKS

This designation includes public and other types of developed recreation areas, state and county parks, and buffer areas. Typical uses include golf courses and neighborhood park.

Clearly compatible zoning classifications:

LDR - Low Density Residential
RR - Rural Residential
RC - Resource Conservation
PF - Public and Quasi-Public Facilities

Conditionally compatible zoning classifications:

CW - Waterfront Commercial
PDR - Planned Development Residential
PDC - Planned Development Commercial
MUPD - Mixed Use Planned Development

- MINERAL RESOURCE AREA

This designation is for areas that have been designated by the State as being areas of regional and statewide importance for mineral resources.

Clearly compatible zoning classifications:

RC - Resource Conservation
PF - Public and Quasi-Public Facilities

IV. CIRCULATION AND TRANSPORTATION

A. MOBILITY

The purpose of a circulation and transportation system is to move people and goods within the city and region in the quickest, most efficient, and most convenient way. A good system will make available a number of choices to the people using the system, including public transportation, streets and highways, bicycle paths and pedestrian ways. The system should insure accessibility by all residents to the educational, recreational, employment and cultural opportunities in the city and the region.

The Solano County Transportation Plan coordinates all the local circulation plans within a county-wide plan. The Metropolitan Transportation Commission uses the plan when making decisions on grant approvals for street and highway improvements, transit expansion and bicycle routes. (Only those parts of the city's circulation system which have impact on county-wide circulation are included within the Solano County Transportation Plan.)

The priority and scheduling of public improvements should follow the goals and policies outlined below.

1. Providing Choices

   Increasing pollution levels, energy consumption and travel costs can be expected if the private automobile continues to be the primary mode of transportation. Transit, including public and private and non-motorized forms such as bus systems, van pooling and bicycle and pedestrian ways, are emphasized as alternatives to the private automobile.

2. Reducing Pollution

   High noise and air pollution levels in the Vallejo area are directly attributable to dependency on the automobile. Goals for reducing this dependency are discussed in the following sections. Noise mitigation is discussed further in the noise section.

Mobility Goal: To have mobility for all segments of the community with a transportation system that minimizes pollution and conserves energy and that reduces travel costs, accidents and congestion.

Policies:

1. *When evaluating future expansion of streets and highways, consider incorporation of public transit, bicycle and pedestrian rights-of-way, and distribution of goods and services as a system to maintain the citizenry, rather that as a system devoted solely to the accommodation of the private automobile. (See also sections on Transit and Non-motorized Transportation.)*

2. *All residents, especially the elderly, the handicapped, the young and the low income individual, should be served by the transportation system.*

3. *The transportation system should not unnecessarily pollute the environment with excessive noise, air pollution, and signing.*

4. *The toll of deaths and injuries which result from transportation accidents should be kept to a minimum. (See the section on Traffic Safety.)*

5. *The time spent in travel should be reduced so that time may be used in more productive and enjoyable ways.*

6. *Prior to approval of a particular land use, it should be analyzed to determine its impact on the existing circulation system. (See the section on Compatibility with Adjoining Land Uses.)*

B. STREET AND HIGHWAY SYSTEM

Streets and highways have two functions which are incompatible from a design standpoint: to provide mobility and to provide land access. High or continued speeds are desirable for mobility, while low speeds are more desirable for land access. A functional classification provides a functional specialization in meeting the access and mobility requirements of the streets and highways. Local streets emphasize the land access function, freeway and arterials emphasize a high level of mobility for through movement, and collectors offer a more balanced service for both functions.

Vallejo's major street pattern was developed on a grid system oriented in north/south and east/west directions. Major arterial streets are located at half-mile to one-mile intervals, while collector streets are generally located at half-mile to quarter-mile intervals, between the major arterial streets.

1. Freeways

Freeways are designed to provide rapid movement of large volumes of through traffic. Access is controlled and there are no intersections at grade, traffic signals, stop signs, pedestrians or parking to hinder movement. Opposing traffic streams are separated by a dividing strip. (An expressway is a modified freeway with some intersections at grade.)

- Interstate 80

Interstate 80 (I-80) is the major north - south route through Vallejo, connecting the San Francisco Bay Area with the Sacramento Valley, the Sierras, and the state of Nevada. It is both an interregional traffic carrier and a major commuter road. I-80 is six lanes (three lanes in each direction) west of the Columbus Parkway / State Route 37 interchange, and eight lanes east of it. It carries 120,000 vehicles per day at different locations through Vallejo.

Interstate 80 is operating near capacity, with significant delays during the peak hour, west of the Tennessee Street interchange. Furthermore, traffic at the Carquinez Bridge Toll Plaza experiences excessive delay with approximately 7,500 eastbound vehicles during the PM peak hour. It is estimated capacity will be exceeded by the year 2000.

Caltrans completed the first phase (eastbound ramps) of an interchange modification at Redwood Parkway. The purpose of the modification is to upgrade the interchange to better interconnect the freeway with the local street system. The second phase (westbound ramps) has not started yet but it is tentatively scheduled for the fiscal year of 1990/91. The estimated total cost is $1.9 million. The second phase (westbound lanes) is not included in the current STIP (State Transportation Improvement Projects); however, the City is undertaking some of the improvements as part of the Fairgrounds Drive / Redwood Street project.

The current route for the Carquinez Bridge and its approaches is the eight-lane freeway. Caltrans recently completed improvements to the toll plaza area. Caltrans has determined that the existing southbound span, the original span, does not meet current seismic safety standards. As a result, Caltrans is working on two alternatives: one, replace the existing bridge with a new bridge that would have four lanes of travel and a separated pedestrian and bicycle lane; or, two, construct the necessary seismic upgrades to keep the existing bridge and use this structure for pedestrians and bicycles and construct a new bridge with four travel lanes. The northbound span, the newer of the two parallel steel truss structures, could be restriped for four lanes of traffic It is estimated that the improvements would be completed by 2001-2004.

Future improvements for I-80 include widening the section between the Carquinez bridge and SR-37 from six to eight lanes, reserving two lanes for High Occupancy Vehicles (HOV). There is no tentative scheduled date of completion at this time.

The Metropolitan Transportation Commission (MTC) is developing a Draft I-80 Alignment Plan through the year 2010 with representatives of all impacted I-80 jurisdictions. Potential improvements will be evaluated to insure that they are cost effective in reducing congestion, not only through Vallejo, but also north through Fairfield and south through Contra Costa and Alameda counties.

- Interstate 780

Interstate 780 (I-780) runs east-west from Vallejo to Benicia, connecting with Interstate 680 further south, and is used both for local commuter trips and recreational travel. I-780 is a four-lane facility (two lanes in each direction) and carries about 40,000 vehicles per day within the city limits. Peak congestion on I-780 occurs eastbound in the morning with traffic routinely backing up approximately one mile, near the I-680 and Benicia Bridge interchange. Caltrans was exploring the possibility of widening I-780 from four lanes to six lanes from interchange at I-80 to the interchange at I-680 as part of the Martinez-Benicia Bridge improvement project. However, at this time, this widening has been dropped from the bridge project.

2. State Highways

- State Route 29

SR 29 / Sonoma Boulevard is a north-south highway that runs about 1.5 miles west of I-80, connecting Vallejo with Napa, and points north along the Napa

Valley. It is a four-lane (two lanes in each direction) undivided facility through downtown Vallejo, and becomes a four-lane divided expressway north of Couch Street. SR 29 carries about 13,000 vehicles per day through downtown Vallejo, increasing to 16,000 north of SR 37. SR 29 / Sonoma Boulevard experiences severe congestion, during peak periods, in the vicinity of the SR 37 / Marine World Parkway intersection, due to heavy approach volumes on both routes.

- State Route 37

State Route 37 (SR-37)/Marine World Parkway is an east-west route of regional significance that extends from US-101 in Marin County, through Vallejo, to Interstate 80. Between I-80 and the Napa River Bridge, the highway has been undergoing improvement to freeway standards. Phase I, from I-80 to Diablo Street the improvements were completed in 1992. Phase II has been more difficult since this section spans the White Slough wetlands. With the approval of the White Slough Specific Plan by the City, County, and the San Francisco Bay Conservation and Development Commission (BCDC), a major step was been taken to complete this Phase. It is anticipated that construction would begin in the year 2000-2001. West of the bridge, SR-37 (Sears Point Road) is essentially a limited access highway with at-grade intersections and left-turn pockets at major intersections. Daily traffic volumes range from 27,000 to 44,000 vehicles at different locations through Vallejo.

Congestion occurs on the improved section of SR 37 / Marine World Parkway because of the lack of improvements at the SR 37 / SR 29 intersection. The unimproved section suffers from congestion during peak periods as well.

3. Arterial Streets

Arterials are the primary movers of traffic within the city. As such they should be free from strip commercial development which is visually chaotic and severely interferes with the movement of traffic. No further strip commercial zoning will be approved, either on new arterials or on existing arterials. In addition, since arterials frequently provide the major visual orientation to a city, everything possible should be done to enhance their attractiveness by undergrounding utilities, providing curbs, gutters, and sidewalks, landscaping, and making a general effort to beautify these facilities. No driveways for low density residential uses should be permitted off arterials. Other driveways should be kept to a minimum by combining driveways for different uses within a zone. Traffic intensive uses on corners should preferably have driveways off the cross street.

Arterial streets carry traffic to and from the freeways and provide the primary routes through the city. Major north-south arterials in the city of Vallejo include Columbus Parkway, Ascot Parkway, Rollingwood Drive, Oakwood Avenue, Admiral Callaghan Lane (north of Redwood Parkway), Fairgrounds Drive, Tuolumne Street, Broadway/Alameda Street, Sacramento Street, and Wilson Avenue/Mare Island Way. Major east-west arterials include Redwood Parkway, Turner Parkway, Tennessee Street, Solano Avenue, Springs Road (east of I-80), Georgia Street, Benicia Road, Lemon Street, and Curtola Parkway.

Forced flow operations, with excessive delays and long queues, did occur at the Wilson Avenue/Tennessee Street intersection during peak periods when Mare Island Naval

Shipyard was operating. It is anticipated that similar backups could occur with the reuse of the island unless the intersection is improved. Relatively high delays, approaching unstable operations, also occur during peak periods at the intersections of Redwood Parkway with Tuolumne Street, Fairgrounds Drive, I-80 ramps, and Admiral Callaghan Lane, as well as the intersections of Tennessee Street with Tuolumne Street and Mariposa Street.

Columbus Parkway will be upgraded to a four-lane roadway between I-80 and the southern end of Ascot Parkway, as a part of the Northgate project. Additional related improvements will be the extension of Ascot Parkway, Turner Parkway, and Redwood Parkway from their present end to Columbus Parkway. Longer range plans for Columbus Parkway include upgrading to a four-lane facility between the southern end of Ascot Parkway and I-780, including realignment of some intersections.

The City is undertaking the improvement of Mare Island Way and Wilson Avenue between Florida Street and SR 37.

4. Collector Streets

Collector streets distribute traffic between local streets and major arterials. Major collector streets include among others Sereno Drive, Nebraska Street, Springs Road (west of I-80), Maine Street, Santa Clara Street, Couch Street, Magazine Street, Fifth Street, Amador Street, Admiral Callaghan Lane (south of Redwood Parkway), Maple Avenue and Glen Cove Road.

Collector streets connect residential neighborhoods with arterial streets. They provide a means of through traffic movement within a limited area as well as give direct access to abutting traffic. They should be planned so as not to attract large volumes of through traffic nor to disrupt the area they serve.

Local streets have one primary function -- to provide direct access to abutting properties. They should be short to afford maximum safety, but they may carry heavy traffic if they are important business streets. Serious congestion and conflict occur when arterials are forced to play a dual role serving both through and local traffic. Likewise, disruption of a neighborhood and traffic hazards results when through traffic is permitted to use local streets. Local streets are not shown on the General Plan.

Some parts of the street and highway system have been identified as eligible for designation as scenic routes because they provide exceptional views for the motorist (see Section H below).

Four major goals of the street system are discussed in more detail below. They address the need for increasing safety, enduring compatibility with the adjoining land uses and providing parking.

Street and Highway System Goal: To have a functional street and highway system that provides appropriate access to the industrial, commercial and residential areas of the city.

Policy:

State Route 37 should be expanded between Diablo Street and the Napa River Bridge as a four-lane divided highway consistent with the requirements of the White Slough Protection and Development Act.

C. TRAFFIC SAFETY

Public improvement specifications are set by the City to insure the streets and highways provide adequate access for emergency vehicles and to minimize the hazards to drivers and pedestrians. At times, the specifications may conflict with other goals and policies expressed elsewhere in the Plan. For example, existing specifications for the most part do not distinguish between hillside development and flatland development. The following goal and policies attempt to reduce this conflict.

In developing these policies, three points have been recognized: 1) absolute convenience and total safety are unobtainable at any cost; 2) some inconvenience and minor hazards are inherent even in the best practical design; and 3) important economic savings may be accomplished with only minor inconvenience. For example, visually narrow street spaces assist in reducing traffic speed. Most drivers tend to reduce speed in confined spaces, since confinement narrows the field of vision and creates a sense of rapid movement. At the same time, narrower streets reduce the development and maintenance costs. Pedestrian accidents are somewhat proportional to street crossing travel distance.

Traffic Safety Goal: To have a street and highway system that is safe to use.

Policies:

1. *Reduce excessive speeds and amount of traffic in residential neighborhoods through a variety of design techniques, including narrowing of streets or intersections, landscaping, diversion of traffic and closing of streets. Innovative approaches to street design shall be encouraged as an incentive for greater use of the Planned Development approach to land development and neighborhood design.*

2. *Wherever possible, residential street layouts should be planned to avoid four-way intersections and oblique intersections. Intersections and driveways on the inside of a curve should be avoided. Turning lanes at heavily traveled intersections should be avoided.*

3. *Sight distances should be consistent with probable traffic speed, terrain and alignments. Horizontal and vertical street alignments should relate to the natural contours of the site insofar as is practical and should be consistent with other design objectives. They should be selected to minimize grading quantities. Existing unpaved street rights-of-way too steep for cars or not needed should be abandoned or used to provide landscaping.*

4. *Traffic hazards created by the location of trees, driveways, poles, fences, etc. should be described and policies for minimizing the hazards should be adopted by the Planning Commission and City Council.*

5. *On streets with frequent intersections having traffic lights, the lights should be timed and posted for a particular speed to smooth out traffic flow. Commercial and industrial facilities should be site designed to have access drives when fronting directly on major streets.*

6. *Major traffic generators, e.g. churches and schools, should be located on major collector streets.*

D. COMPATIBILITY WITH ADJOINING LAND USES

Planning policies on land uses along freeways and major arterials as well as building and site design can reduce the impact of transportation generated noise upon adjacent land uses. On other streets, particularly minor residential streets, policies should be geared toward limiting through traffic. Straight wide roads, for example, should not be permitted. Small parcels of land surrounded by streets should be avoided; only low traffic generating uses should be permitted on existing island parcels.

Residential land uses are more sensitive to traffic impacts. For this reason, most of the following policies refer to neighborhood design.

Compatibility with Adjoining Land Uses Goal: To have a street and highway system that services all land uses with a minimum adverse impact.

Policies:

1. *Residential development should not front directly onto expressways or major arterials and there should use ornamental masonry walls or solid fencing with landscaping and, if possible, the roadway should be at a lower elevation than the residences. Pedestrian access within such developments should be provided to facilitate use of the transit system.*

2. *Where residential development does front on major streets, including major collectors (exceeding 1,000 ADT), there should be a greater front setback to reduce noise and air pollution impacts. Landscaped median strips can also reduce traffic impact.*

3. *All truck traffic and regional bus service should be restricted to peripheral major streets and north-south,-east-west arterial and collector streets having the least number of residences and schools. Only small trucks servicing the neighborhood centers should be allowed on other streets. Where possible, unloading facilities should be provided off alleys rather than streets.*

4. *Street widening should not be approved in existing neighborhoods where there is significant opposition from the immediate residents. Alternative mitigation should be initiated prior to such widening, including modification of street signalization, rerouting of cross town traffic, creating-one-way streets and eliminating on-street parking. Street widening should include street planting to give an immediate landscaped appearance.*

5. *The specifications for streets should be modified to reduce the amount of grading needed to lower construction costs for developers and to reduce the cost of future maintenance.*

E. TRANSIT

Transit service in Vallejo is provided by bus, ferry, and links to Bay Area Rapid Transit (BART). Bus service is provided locally by the City-owned, privately-owned Vallejo Transit Lines (VTL); VTL also provides the BART Link service. Regionally, Greyhound Bus Line has a station at the transit center on Lemon Street. Benicia Transit provides links to the Pleasant Hill BART station.

The City also has its own ferry service to and from San Francisco with a contract with Blue and Gold. This service attracts users from throughout Solano and Napa Counties, and it will be expanded in 1997 with the arrival of two new City-owned ferry boats.

1. Serving New Residential Areas

   New residential development in Vallejo is occurring primarily on the northern and eastern edges of the city. Existing VTL bus routes have been extended and/or added to serve the new residential areas.

2. Transit Dependent Households

   The 1990 Census indicates that Vallejo has a number of residents that are transit dependent. There were 3,709 residents with physical or other types of mobility limitations. These included 1,710 persons between the ages of 16 through 64 years and 1,999 persons 65 years and older. There were 3,175 households without any vehicles. These figures indicate a substantial need for services for the transit-dependent.

Figure 6 describes the commute trends (1970-90) of employed Vallejo residents. Judging from sales in the new large housing tracts the trend towards commuting is continuing and the demand for a transit center is increasing, In addition, there is a growing need to inform commuters about and to encourage car and van pooling.

Figure 6

Commute Trends of Vallejo Residents

	1970	1975	1980	1990
Vallejo residents working in:				
Solano County	78.0%	75.9%	61.6%	50.7%
Napa County	3.2	3.4	4.1	3.0
All other counties	18.8	20.7	34.3	46.3
Total	100.0%	100.0%	100.0%	100.0%

Transit Goal: To have a transit system that results in a significant increase in transit usage especially among commuters and better service for transit dependent residents.

Policies:

1. *Local and regional transit systems should be given a priority equal to that of the private automobile when developing the future street system and when reviewing specific development proposals.*

2. *Policies for the location of new bus stops should be adopted by the City; developers should be required to put in bus stops as a part of large scale developments.*

3. *All major community facilities should be made accessible from public transportation; all uses that are, by nature, transit dependent, e.g., senior citizen housing, should be readily accessible to transit.*

4. *The transit system should be designed to permit safe use by handicapped people.*

5. *The City should provide reduced rates on the local transit system to commuters (local residents and employees) traveling from their place of residence or employment in Vallejo to the transit center, if they show evidence that they will be using a regional mass transit system (bus, ferry or rail).*

6. *The City should investigate the possibility of providing reduced bridge fares for car and van poolers; local parking requirements of large employers should be reduced if the employer will be providing van pooling and privileged parking for car poolers.*

F. PARKING

Although parking is not often evaluated as part of the streets and highways system, its design and adequacy can have a significant impact on how well the system functions. The relative cost of off-street and on-street parking should be carefully explored. Relative excavation quantities, runoff alternatives, maintenance costs and percent of publicly owned land are important considerations.

Parking Goal: To have the parking need satisfied primarily in well designed off-street parking facilities.

Policies:

1. *The City should encourage the elimination of on-street parking in the downtown and on major streets throughout the community in order to facilitate traffic movement. Implementation of this policy will depend upon the extent to which off-street parking can be adequately substituted. Reserve close in parking in public lots for short term use.*

2. *Modify the Zoning Ordinance to permit deferral of required parking spaces with the land to be held in landscaped reserve until such time as the spaces are determined to be needed.*

3. *Parking of trailers, recreational vehicles and other special purpose limited use vehicles should not be permitted on residential streets, in front yards, or between residences, because of the visual impact and fire hazard.*

4. *Parking lots should be subject to access easements to allow the City to require connections between parking lots at a future date.*

5. *Conversion of residential units to commercial use without provision of adequate parking should be limited to only those uses that require little parking or where there is other adequate off-street parking.*

G. NON-MOTORIZED TRANSPORTATION

Encouraging pedestrian and bicycle traffic can help to reduce dependency on the automobile. Three major factors influence "would be" pedestrians and cyclists. They are: 1) attractive bike and walkways, 2) safe facilities; and 3) routes that take them where they want to go.

1. Bicycle Traffic

In planning any street improvement, consideration should be given to the bicycle as a potential part of the traffic mix, whether or not the street includes a designated route. In order for the bicycle to be a viable transportation alternative, the opportunity to bicycle to virtually any destination should be provided.

The cyclist is capable of adapting to quite a range of conditions. Needs must be evaluated from a practical point of view, keeping in mind that the objective is to provide the most service for cyclists with the resources available.

2. Pedestrian Traffic

Like cyclists, pedestrians have almost unlimited accessibility with the existing street system despite hurdles presented by heavily traveled roads and long blocks. The following policies are aimed at encouraging more people to walk to neighborhood facilities and within large commercial areas of the city, particularly the downtown area.

Non-Motorized Transportation Goal 1: To have facilities that encourage greater use of bicycles for recreation, commuting and shopping.

Policies:

1. *As evidence of the community's desire to encourage healthy and safe alternative modes of travel replacing the auto, the City shall give high priority to implementing the Vallejo Bicycle Route Plan.*

2. *Provide off-street parking and locking facilities for bicycles in conjunction with automobile parking as well as near entrances to public facilities and in areas of high people use.*

3. *Follow State Guidelines for signing, striping, and paving of bicycle paths and lanes. Provide tire proof gates over drainage inlets.*

4. *Realize construction savings by including bicycle rights-of-way in street repair work whenever this is in compliance with the Bicycle Route Master Plan.*

5. *Expand public safety education programs for automobile drivers and cyclists.*

6. *Street maintenance including street sweeping on designated bike routes should occur frequently in order to keep streets free of glass, gravel and other debris harmful to cyclists.*

Non-Motorized Transportation Goal 2: To have safe and pleasant access for pedestrians throughout the community.

Policies:

1. *Provide wide sidewalks, plazas, street furniture, street trees, and arcades in intensive shopping areas to increase pedestrian movement and comfort.*

2. *Provide safe pedestrian crossing, e.g., signalized crosswalks and pedestrian overpasses, on major streets where day-to-day activities warrant them. Pedestrian walkways should be provided between residential neighborhoods and high use areas such as schools, parks and commercial centers. The walkways should be safe for adjoining property owners and users.*

3. *Ramps should be installed in all public facilities and at all sidewalk corners and midblock crossings so that disabled persons may participate more easily in routine community activities. New development should follow the handicapped regulations of the Office of the State Architect (Title 24) and the Americans with Disability Act (ADA).*

H. SCENIC HIGHWAYS

The numerous characteristics that determine the relative scenic value of a highway or corridor within urbanized areas are as follows:

Characteristic	Value
Landscaping	Provide a contrast to manmade structures; street trees unify a streetscape.
Water	Beauty of its movement and its surface reflection.
Skyline, Natural and Manmade	Beauty of both architectural and topographic skyline.
Distant Views from Elevated Point	Gives a different perspective of an area.
Contrast between Rural and Urban Development	Provides visual relief from manmade structures; sense of identity for urban area residents.
Unique Features or Landmarks including Architectural and Street Design or an Unusual Feature	Orients the individual; increases pride in the community.

Features that detract from the scenic quality include excessive overhead wires, litter or fill dumping, unkempt storage facilities, uncoordinated development and undeveloped lots, a minimal amount of landscaping or lack of landscaping, deteriorated structures, and cluttered signing.

State Routes 37 and 29, west and north of their point of intersection, have been listed as eligible for Official Scenic Highway designation by the State Scenic Highway Advisory Committee. Before they can become official scenic highways, however, there must be a corridor survey and highway facility study completed by the District Director of Transportation, a work program prepared, and a written request submitted by the City to the District Director for designation of the route as an Official Scenic Highway.

New routes can be added to this eligibility list by action of the State legislature. The City can adopt unofficial routes without going through this process. In this case, only the policies included in this section would apply. Routes that were surveyed for possible inclusion in a scenic highways program include Interstate 80, Interstate 780, Mare Island Way/Wilson Avenue from State Route 37 to Interstate 780, Columbus Parkway, Georgia Street and Redwood Parkway.

As specific plans for each route are prepared, they will be reviewed by the Beautification Advisory Commission for consistency to the overall scenic route plan. In addition, as areas are annexed to the City or as development plans are proposed for largely undeveloped areas, the City will evaluate the proposed roadways in terms of adding them to the scenic route system.

Scenic Highways Goal: To protect and enhance the visual corridors of designated scenic routes.

Policies:

1. *Obtain official designation of those routes eligible as Official State Scenic Highways.*

2. *Using citizen input, develop specific plans for each proposed scenic route corridor, include standards for special treatment of interest points and standards for well designed street furniture, e.g., light standards, waste bins, that will enhance the corridor.*

3. *Coordinate new development along scenic corridors; modify the subdivision ordinance to include requirements for special treatment of subdivisions bordering the corridors. These requirements may include limited access, screening, landscaping, modified road design standards and park strips.*

4. *Work closely with Public Works Department and other City departments in developing new standards to insure low maintenance landscaping.*

5. *Set a high priority for enforcement of the sign ordinance along scenic corridors. Study the existing sign ordinance to determine the need for change regarding off-site signs.*

6. *Adopt a litter control program.*

7. *Provide bicycle routes along scenic corridors where there is adequate right-of-way.*

8. *Design and provide an official sign for marking scenic corridors.*

V. HOUSING

Please refer to the Housing Element (under separate cover) of this Plan.

VI. EDUCATIONAL FACILITIES

A. INTRODUCTION

The quality of education is an indication of a community's overall quality of life and an indication of a community's perception of itself. When the quality of education is high, then the self-confidence of the community is strengthened and every aspect of life benefits.

The actual or perceived quality of education affects not only the direct users of the system, such as students, teachers and parents, but the indirect receivers as well. A good educational system attracts new residents to the area who tend to be well-educated or interested in improving themselves and their community. A good educational system also attracts new business and industry, bringing additional employment opportunities and revenues into the area. Most importantly, a quality system of education benefits the entire community by raising the self-esteem and self-confidence of its citizens. A community that feels good about itself will project a positive and healthy image throughout the region.

Vallejo has an excellent educational system, and desires to maintain its excellent standards. That is why the City, with the assistance of the Vallejo City Unified School District (VCUSD), has prepared this Education Facilities Element. The purpose of this Element is to present an assessment of the system as it exists in 1996 and a projection of where it will be in the future. It discusses the issues the City and VCUSD face in coping with the existing situation and the future projections, such as improving educational quality, meeting current and future needs, and funding those needs. Next, the Element offers the goals and policies for implementation to carry out the resolution of the issues.

Education is essential to Vallejo and its residents. This Element is an indication of how essential it is and the City's commitment to insuring its quality.

B. THE REQUIREMENT FOR AN EDUCATION ELEMENT

As previously discussed, State law requires all cities and counties in California to have a general plan with seven mandatory elements (Land Use, Circulation, Housing, Safety, Open Space, Conservation, and Noise). An education or school element is not required at this time; in fact, very few cities and countiess in the state have them. Vallejo has included such a document in its General Plan in response to a growing concern in the community about the need for a quality educational system to meet the existing and planned development and the lack of adequate funding to meet these needs.

This concern began growing with new development in the late 1980's, including the Glen Cove, Sky Valley (Hiddenbrooke), and Northgate projects. However, it reached an apex when it became clear that funding from the State to supplement local funds for public schools was going to be inadequate to provide facilities for new development to meet existing needs. It was clear that new approaches to resolve this dilemma would have to be developed. The Vallejo City Council responded, and initiated an amendment to the Plan. The result is this Educational Facilities Element.

C. EXISTING EDUCATIONAL FACILITIES IN VALLEJO

There are a variety of public and private educational facilities in Vallejo. While the emphasis of this Element is on public facilities, the private side should also be identified in this document as part of the City's educational resources.

1. Vallejo City Unified School District

The incorporated area of Vallejo is within the boundaries of the VCUSD, which is responsible for all public educational services and facilities that serve the school-age population of the City. VCUSD is divided into school attendance areas. The boundaries of these areas serve as both guidelines for enrollment and as a planning tool. As some schools become overcrowded, or to meet desegregation requirements, attendance areas may be shifted on a permanent or temporary basis. Boundaries may also shift to reflect the addition of new schools into VCUSD.

The basis for these attendance areas is a "neighborhood school" concept, with a centrally located school facility in each area within a recommended walking distance for students attending that school. The VCUSD's policy states that the distances are the following: 1.5 miles for elementary school students; 2.25 miles for junior high or middle school students; and 3.0 miles for senior high school students.

There are 24 schools within VCUSD serving kindergarten through 12th grade plus special education. These include 18 elementary schools, four junior high schools, two high schools, and a continuation high school. VCUSD operates a portion of the elementary schools on a year-round schedule, while the remainder and the junior high and senior high schools are on a traditional schedule.

VCUSD is currently in the process of constructing and planning new schools to meet already-identified need due to enrollment growth. These include one senior high school under construction, plus two additional elementary schools, and one junior high school, all in the planning process.

The school sites vary in size. Using the California State Department of Education school site standards for net usable acres indicates that many of the existing school sites are undersized for their current enrollment and considered to be impacted sites. Housing additional students on these sites above capacity to alleviate overcrowding, either in existing facilities or in temporary portable buildings, is an interim measure while new schools are constructed.

In addition to schools, VCUSD has administrative offices; maintenance, operations and transportation facilities; and facilities for special programs. The sites for these are located throughout the city.

VCUSD has a wide variety of education services. These include the following: child care and pre-school programs, adult education, child development, nutrition programs, vocational education, work experience programs and other programs to meet the educational needs of the community. These services are also located throughout Vallejo.

2. Other Public Educational Services and Facilities

Within the city, there are other public educational services and facilities. The Greater Vallejo Recreation District (GVRD) has after-school programs, such as Kids' Club and Teen Connection, and other educational programs. In addition, VCUSD and GVRD are combining schools and parks in newer facilities to better utilize these facilities for educational and recreational purposes. The Solano Community College has a satellite campus in Vallejo which is based in the John F. Kennedy Library. The California Maritime Academy, which is part of the State college system, is located in the city.

3. Private Educational Services and Facilities

Vallejo is well represented by a wide variety of private educational services and facilities. There are approximately 30 schools within the city that offer programs from the pre-school level through the high school level (most of this number are pre-schools). Many are independently operated or are part of national chains, but most are associated with religious organizations. These programs offer an alternative to a public school education.

D. GROWTH IN VALLEJO

Changes in population and the number of residential units in a community typically signal changes in school enrollments. By analyzing trends in housing growth and household demographics, the need for future educational services and facilities can be predicted. Future population and housing growth in Vallejo is discussed in Chapter III..

E. EXISTING AND FUTURE EDUCATIONAL NEEDS

The growth described above in Chapter III is having, and is going to continue to have, a significant effect on the existing public educational facilities. VCUSD is currently overcrowded and anticipates increases in enrollment due to this new development. In addition, increases in enrollment area anticipated in existing neighborhoods as well as where younger families with school-age children are relocating (and replacing older families or residents) and there could be more than one family per household. It is anticipated that between the years of 1995 and 2002, VCUSD enrollment will grow by 2.7 percent, or an additional 511 students, to a total of approximately 19,000 students, including K-12, special education (special day class) and continuation high school. This growth could require as many as 304 new classrooms using the following class size standards: 30 students per K-12 classroom; 12 students per special education classroom; and 15 students per classroom in the continuation high school.

In addition, VCUSD also houses approximately 500 students in alternative education programs which serve a wide variety of students with special needs. These students are housed at various sites in the community.

This growth will also require additional student support facilities. The need for expansion already exists due to past enrollment growth. The facilities that will be affected include special services, administrative offices, warehouse, maintenance, operations, transportation, and central kitchen.

Figure 7

Current and Projected Enrollment

Grade	Actual 1995	Projected 2002	Growth
K - 6	10,413	10,904	4.7 %
7 - 9	4,114	3,692	-10.7 %
10 - 12	3,029	3,534	14.3 %
Special Ed.	781	736	-5.8 %
Continuation	260	305	17.3 %
Total	18,660	19,171	2.7 %

This growth will also require additional student support facilities. The need for expansion already exists due to past enrollment growth. The facilities that will be affected include special services, administrative offices, warehouse, maintenance, operations, transportation, and central kitchen.

F. THE ISSUES TO BE RESOLVED

1. Promoting Educational Quality

The quality of a community's educational facilities is one of the most important factors in the well-being of the community. To promote and maintain this quality, the City recognizes there must be safe and adequate educational facilities which provide the best environment for the children of Vallejo. The quality of education can never reach its highest potential if classrooms are overcrowded.

In order to provide adequate and safe school facilities, there must be a high value placed on education and educational facilities by all segments of the community. There must be a community-wide effort and participation to provide adequate school facilities. Not only parents and other direct users of the system, but business, industry, and government should be involved in supporting education and insuring that adequate facilities are provided.

How this can be accomplished in Vallejo is not simple. The City has to continue to demonstrate it is committed to education. This can be done in a number of ways. First, the City should continue to coordinate with VCUSD in order to achieve the goals of providing adequate school facilities. Second, the City should consider school facilities in its land use planning processes, particularly in General Plan amendments

and specific area plan adoptions. Finally, when large properties are proposed for development or redevelopment, the City and VCUSD should work together to identify potential school sites.

2. Meeting Existing and Future Needs

To provide for educational service and facility needs, three things are required -- money, land, and innovation.

Quality education is expensive; and, as discussed below, money to support this quality has never been easy to come by. Current funding methods are inadequate and additional funding sources must be found to provide the necessary facilities for projected enrollment growth. In February 1996, VCUSD estimated that the unmitigated cost of new facilities will be approximately $11.3 million. This amount is above the revenues from VCUSD's Northgate and Sky Valley (Hiddenbrooke) Mello-Roos Community Facilities District and its citywide Mello-Roos Community Facilities District, maximum potential funds from the State, and developer fees.

To find land, the City has assisted VCUSD in designating, reserving and acquiring appropriate sites for new schools and support facilities to accommodate new growth. This assistance has been in the context of the City's land use planning activities, specifically through the General Plan and various specific area plans, in conjunction with VCUSD planning objectives. In the future, this assistance will be crucial since the amount of available land is decreasing.

Through its land use planning processes, the City should consider school site criteria as established by State policy and the State Department of Education. These criteria include safety, location, environment, soils, size and shape of site, topography, accessibility, utilities, and availability of public services. Other considerations should include the placement of school sites away from incompatible land uses, such as shopping centers, industrial parks, and freeways. School sites should be planned in conjunction with community parks to maximize joint-use agreements and recreational facilities, and to minimize conflicts with residential neighborhoods. VCUSD policy for neighborhood schools should be considered in all new development to allow the children to walk to their schools.

VCUSD has used innovation to alleviate overcrowding in its existing facilities in a number of ways. A year-round schedule has been implemented in a number of elementary schools. Kindergartens have been double-sessioned. Portable classrooms have been leased or purchased. The use of existing school facilities has ben maximized by converting cafeterias, libraries, and support rooms to classroom space. (However, using space which was not intended for classrooms is considered to be only an interim measure to be used until new classrooms are constructed.) Attendance area boundaries have been shifted. Enrollments at the most severely overcrowded schools have been closed. New schools, such as Glen Cove and Wardlaw, have been built. However, these efforts, even if expanded throughout the district, will not alleviate completely the existing and future overcrowding. More facilities are going to be needed.

3. Funding Options

The major constraint to providing for existing and future and educational needs is funding. VCUSD has in the past used, and is currently using, a combination of funding

sources for its construction projects. The Glen Cove Elementary School was funded through a combination of a Mello-Roos Community Facilities District (CFD#1) and the Redevelopment Agency. Wardlaw Elementary School, was funded 50 percent through a Mello-Roos Community Facilities District (CFD#2). The other 50 percent was provided by the State through voter-approved bonds.

VCUSD has submitted applications and is in line for new construction project approvals from the State, but it is uncertain whether it will obtain significant additional State funding because of the high demand from other school districts. However, VCUSD has taken the necessary steps to receive the highest priority for future State funding by operating year-round schools and by applying for a program in which VCUSD would pay for 50 percent of new construction projects. In addition, interim portable classroom facilities have been funded through development fees collected on behalf of VCUSD by the City through the issuance of building permits.

However, despite the State's previous promise of financial partnership, the funds from the State are in high demand throughout California. This is especially unfortunate because the State has claimed it preempted the field of funding based on that partnership. And, statewide demand for bond proceeds greatly exceeds the amounts authorities expect to be authorized in the foreseeable future. This leaves virtually only VCUSD funds for new schools and other facilities.

VCUSD (and all other school districts in California) are limited by State law in the amount of funds that can be collected from new development to mitigate impacts from such new development on school facilities. In 1986, the State Legislature removed VCUSD's authority under CEQA to deny development on the basis of inadequate school facilities. In exchange, the Legislature gave to California school districts the authority to levy a developer fee on new residential, commercial, and industrial development. However, the fees collected by the City for VCUSD are inadequate to fund the construction of new schools. To make up the difference VCUSD must seek other options for funding.

There are several funding approaches that VCUSD can consider. One is to fund new construction through monies available from developers. This funding could take a number of forms including: a) dedication of school sites; b) construction of turnkey school facilities; c) formation of a redevelopment project area; and/or d) participation in a Mello-Roos Community Facilities District. However, the Government Code severely limits the choices the City has to require mitigation for school facilities. Most of these forms could best be described as voluntary.

In the past, VCUSD has employed all four methods to supplement impact fees. The Northgate and Hiddenbrooke projects are required to each dedicate an elementary school/park site, as well as participating in the Mello-Roos Community Facilities District #2. Mello-Roos Community Facilities District #3 was created to cover other vacant properties throughout the city. Although never built, the former Cullinan ranch project was required to provide two turnkey elementary schools and one turnkey junior high school, and to provide additional facilities at the existing high school that would serve the project. The Glen Cove Elementary School was built from tax-increment funds generated by the area redevelopment project and a Mello-Roos district.

Another approach is to consider a community-wide effort to provide school facilities. The demand for school facilities is caused both by students generated from new housing developments and by demographic changes in existing neighborhoods. Since it

is a community problem, the argument can be made that every Vallejoan should bear the burden. This approach could include: a) a citywide Mello-Roos Community Facility District; b) citywide general obligation bonds; and/or c) citywide special purpose taxes. None of these community funding mechanisms have been tried in Vallejo before. All three would require a citywide election, with a 2/3 majority vote needed for passage.

Another approach is to look at other financing alternatives. These could include the following, among others: privately-financed loans with possible reimbursement by the State when the bonds are passed; and issuance of certificates of participation by VCUSD. VCUSD could use a combination of any or all of these funding options to meet the existing and future facilities needs with much less reliance on State funds.

The City finds that education and the provision of adequate school facilities are essential elements to the quality of life for Vallejo residents, and are essential elements for quality development. The following goals and policies for implementation are intended to support this finding.

Educational Facilities Goal 1: Insure that the provision of quality education is a priority for every segment of the community.

Policy:

Provide a diversity of quality educational choices within the community for all ages.

Educational Facilities Goal 2: Insure that Vallejo residents have access to educational opportunities, which are a right to be enjoyed without regard to race, creed, color, national origin, sex, or economic status.

Policy:

Continue the ongoing partnership between the City, VCUSD, and GVRD to enhance educational facility planning and implementation.

Educational Facilities Goal 3: Provide adequate facilities to meet existing and future educational needs.

Policies:

1. *Reflect the City's commitment to quality education through mechanisms insuring that the rate of growth and the rate of providing new services and facilities are compatible.*

2. *Continue to provide assistance to VCUSD in site selection, traffic control, circulation, and site acquisition.*

3. *Amend the Land Use Map, where and when appropriate, to designate new school sites that meet the State and District standards, which are away from incompatible land uses, are part of community parks, and insure the concept of neighborhood schools.*

4. *Include VCUSD on the City's Technical Project Review Committee for all new residential development.*

5. *Work with VCUSD to create and maintain a shared data base for planning and forecasting purposes.*

6. *Consider creating with VCUSD a citywide citizens task force to evaluate and support citywide funding mechanisms.*

Educational Facilities Goal 4: Enable the development community to build quality projects in Vallejo while still providing adequate school facilities to serve those new projects.

Policies:

1. *Work with VCUSD in the use of innovative financing options, including those which use participation by the community as a whole and by the private sector, which enable the delivery of educational services and facilities to be concurrent with the need.*

2. *Mitigate to the extent feasible the impact of new residential development on existing and future educational services and facilities.*

3. *Utilize redevelopment powers and developer participation, where appropriate, to help provide adequate new school facilities and enhanced existing facilities.*

4. *Consider a program which would allocate the issuance of building permits on new residential units based on the availability of public services, including VCUSD facilities, necessary to serve the new residential development, and which would include an option for new development to mitigate its impact through alternative mechanisms.*

5. *Place as a condition on all General Plan amendments to residential designations, rezonings to residential classifications, and approvals of residential projects the following or a functional equivalent: "The Developer shall obtain written certification from the VCUSD (or show cause why the mitigation proposed by VCUSD should not be required) that the Developer has mitigated the school-related impacts of this project satisfactory to VCUSD. The methods under which the school-related impacts are to be mitigated include, but are not limited to, those methods set forth in the Government Code. This condition shall not be construed as a limitation on VCUSD's choice of legal mitigation alternatives."*

VII. PUBLIC FACILITIES AND OTHER SERVICES

The capacity of municipal systems and services is one of the most critical determinants of the City's future rate of development. Management of these systems based on a sound plan is needed to insure that urban expansion occurs in an orderly fashion.

A. PARKS AND OPEN SPACE

The Greater Vallejo Recreation District (GVRD) oversees the park planning for the city and county islands. Park facilities are required at several levels: neighborhood parks, community parks, and regional parks. Standards are used by the District to insure parks are distributed equitably throughout the city.

NEIGHBORHOOD PARKS are small parks of four to seven acres serving residential neighborhoods. The District standard is 4.25 acres per 1,000 people, to be located within one mile radius of the area served. These parks are oriented to children and where possible should be located at the center of the neighborhood. Beverly Hills Park and Washington Playground are neighborhood parks.

COMMUNITY PARKS are larger parks of 12 to 15 acres, smaller if adjoining a school. They serve a broader age group and often contain facilities for the whole community, such as a swimming pool, night lighted ball fields, golf course, community recreation building, as well as areas of passive use. Richardson Park and Blue Rock Springs Park are community parks. The District standard is five acres per 1,000 people, to be located within one and one-half mile radius of the area served.

REGIONAL PARKS are large parks (minimum 25 acres) attracting users from a wide geographical area. Regional parks frequently have a unique or unusual resource as focal point. Many regional (and community) parks serve as neighborhood parks for immediate residents. Dan Foley Park is an example of a regional park.

Individual parks, when linked together, can provide the basis for a citywide trail system. Bicycling, jogging and other similar activities would be better served by an integrated park system.

In addition, open space areas providing relief from the urban landscape and having passive and active recreational value can be considered parts of the park system. The Tri-City and County Cooperative Planning Area between Vallejo and the cities of Benicia and Fairfield is an example of this type of open space.

The neighborhood model used to project park needs is as follows:

- The neighborhood is primarily single family units with some multi-family units.
- There are 3.3 persons per family. (This figure reflects the higher household population size found in new homes.)
- The lots range from 5,000 to 7,000 square feet with approximately five per gross acre.

- The number of people per gross acre may vary from 15 to 25.

- Whenever possible, neighborhoods should be defined so that the park is near the center and people do not have to cross a major street to reach it.

- Maximum service distance should not exceed one mile.

Of special importance to future recreation and open space needs is the waterfront and the hillsides. The Plan recognizes the importance of capturing the eastern waterfront for the exclusive use of activities directly related to the water. Although this would include industrial and appropriate commercial uses, emphasis is placed on the need to provide for public access to, and use of, this unique asset. Proposals include the pedestrian marina boardwalk, scenic highways, and public easements along the waterfront. The Final Reuse Plan anticipates additional active and passive open space and recreation areas will be available through the reuse of Mare Island.

The Plan also recognizes the importance of the northeastern skyline as the setting for a major regional park, as well as the need to maintain the openness of hillsides and mountains through planned development and agricultural zoning. The Plan has been implemented through the adoption of the Hiddenbrooke and Northgate Specific Area Plans. The area of wooded hilltop to the west of I-80, above the present roadside rest, also has excellent park potential; particularly as a overnight campsite. Preserved in open space these areas would provide continuing visual amenities and act as a buffer to give character and continuity to the city. As a long range goal, consideration should be given to possible future public acquisition of property in these areas.

The largest future park area is the 10,000-acre Tri-City and County Cooperative Planning Area for Agriculture and Open Space between Vallejo, Benicia, and Fairfield. The Cooperative Plan for this area has been adopted as part of this General Plan.

Figure 8

Major Open Space and Park Complexes

Complex	Present	Future	Total
Blue Rock Hills Complex			
Open Space (Northgate)		536.6	536.6
Blue Rock Springs Park	26.0		26.0
Blue Rock Springs Complex			
Blue Rock Springs Golf Courses	300.0		300.0
Blue Rock Springs Corridor	106.2	31.0	137.2
Hanns Memorial Preserve	13.5		13.5
Skyview Reservoir	5.8		5.8
Napa River			
Trails			
Neighborhood Park		15.0	15.0
North Wetlands (above White Slough area)			
South Wetlands (within White Slough area)		468.0	468.0
Mare Island Strait (Eastern Side)			
Fishing Pier (closed)	± 400.0 ft		± 400.0 ft
River Park (land portion)	55.0		55.0
City Marina Promenade	± 2,800.0 ft		± 2,800.0 ft
Marina Vista Promenade	± 3,000.0 ft		± 3,000.0 ft
Hiddenbrooke			
School / Park		26.0	26.0
Open Space	627.0		627.0
Tri-City and County Cooperative Planning Area for Agriculture and Open Space			
Cooperative Planning Area		10,000.0	10,000.0

Figure 9

Greater Vallejo Recreation District Facilities

Neighborhood Parks		Acres
1.	Amador Area	4.8
2.	Beverly Hills Park	11.1
3.	Borges Park	3.0
4.	Carquinez Park	6.9
5.	Castlewood Park	4.0
6.	Children's Wonderland	4.0
7.	City Park	4.3
8.	Country Club Crest Park	3.0
9.	Fairmont Park	1.5
10.	Grant Mahoney Park	2.7
11.	Henry Ranch Park	3.1
12.	Highlands Park	6.5
13.	Independence Park	1.0
14.	Lake Dalwigk (land area)	11.8
15.	Monte Vista Library	0.2
16.	Mt. Everest Park	22.0
17.	North Vallejo Park	10.0
18.	Richardson Park	6.0
19.	Rosa Mini Park	3.3
20.	Setterquist Park	10.3
21.	Sheveland Park	1.0
22.	Terrace Park	12.0
23.	Washington Park	3.5
24.	Wilson Park	8.8
25.	Glen Cove Park	

Community Centers

1. Foley Cultural Center
2. North Vallejo Community Center
3. Norman C. King Community Center
4. Vallejo Community Center

Neighborhood Centers

1. Elkins Community House, Rosa Mini Park
2. Castlewood Community Building and Clubhouse, Castlewood Park
3. Washington Craft Building, Washington Park
4. Snider Community House, Setterquist Park
5. Monte Vista Library Center

Acquired, Undeveloped Facilities

1. McIntyre Ranch
2. Glen Cove Waterfront Park

Parks and Open Space Goal: To have a park and open space system that is convenient and properly designed to serve the needs of all residents of the community.

Policies:

1. *Park design should be compatible with the surrounding land uses, and should reflect the natural environment. All proposed parks and recreational open space should be evaluated by the appropriate agencies and groups (including Planning, Public Works, Police, Fire, GVRD, VSFCD, VCUSD, Environmental Health and affected neighborhood organizations) in terms of community need, proper location and orientation, and accessibility.*

2. *Parks and recreational open space that will be dedicated should be consistent with the Master Plan adopted by GVRD.*

3. *The design of parks should take into consideration the concept of defensible open space to protect the safety of park users and the surrounding land uses.*

4. *Where feasible, neighborhood parks should be located in conjunction with a school so that facilities can be shared.*

5. *The open space and recreational areas identified in the Hiddenbrooke and Northgate Specific Area Plans should be implemented as resources are available.*

6. *Trails and rights-of-way linking recreational areas should be provided.*

7. *Figure 8 lists the major open space and park complexes either in existence or proposed. For those proposed facilities which do not have acreage figures listed, these will be prepared in conjunction with specific area planning. Figure 9 lists existing facilities managed by GVRD.*

B. OTHER SERVICES

1. Wastewater (Sanitary Sewer) System

The wastewater system in the City of Vallejo is operated and maintained by the Vallejo Sanitation and Flood Control District (VSFCD). The VSFCD boundaries encompass all lands within the city, with the exception of Mare Island, and a portion of the developed unincorporated lands outside the city. The VSFCD currently provides wastewater treatment services to Mare Island through a contract with the Navy. Upon closure, the VSFCD may ultimately operate and maintain the system as disposal and reuse is implemented.

The VSFCD, in 1987, developed a Master Plan for wastewater facilities to provide for the collection and treatment of flows generated by the area within its boundaries as ultimate buildout. The Master Plan was updated in 1992. Development that occurs within the VSFCD boundaries is required to comply with the Plan and supports the projects described in the Plan through the payment of fees based on the relative impact of the development on the various projects of the Plan.

The wastewater treatment plant currently has the capability to provide secondary treatment to 15.5 million gallons per day of wastewater flow. With minor

modifications, the capacity could be increased to 18.5 million gallons per day. The Regional Water Quality Control Board is in the process of issuing a permit to the VSFCD for 15.5 million gallons per day of flow. This permitted flow will meet the VSFCD's need to provide service to the area as well as meet the needs of Mare Island.

2. Storm Water System

The Vallejo Sanitation and Flood Control District (VSFCD) is responsible for the operation and maintenance of the flood control system within the City of Vallejo boundaries with the exception of Mare Island. The VSFCD may ultimately operate and maintain the storm water system on Mare Island as disposal and reuse is implemented.

The VSFCD developed a Master Plan for storm drainage of the area within its boundaries in 1987 and updated the Master Plan in 1992. The Master Plan is based on the ultimate buildout of the area within VSFCD's boundaries. The Master Plan calls for 15-year rain event return frequency design standard for facilities serving a watershed of less than one square mile and 100-year rain event return frequency design standard for facilities serving a watershed greater than one square mile. Development that occurs within the VSFCD boundaries are required to comply with the Master Plan through construction of facilities to meet these standards of the payment of fees based on the relative impact of the development on the Master Plan facilities.

The land under VSFCD's jurisdiction is divided into five drainage areas, four of which fall within natural drainage basins: Lake Chabot, Austin Creek (two basins) and Lemon Street basin. The remaining land drains into either the Carquinez Strait to the south or into Napa County to the north.

Development of the planning area will add to peak runoff because developed land, with its more impervious surface, produces a significantly greater amount of runoff. New developments are responsible for providing all storm drainage facilities as required by the District. Additional measures, such as retention basins, greenbelt areas, and permeable paving, could be used to reduce the total amount of runoff.

VSFCD, the City, and Solano County will be co-permittees on a National Pollution Discharge Elimination System (NPDES) permit for storm drainage. The permit is required by the federal Environmental Protection Agency (EPA) in accordance with regulations adopted in 1990. In general, the regulations require all communities with populations over 100,000 to develop a program for reducing pollutants carried by storm water runoff into waters of the United States. The permit serves as the mechanism for enforcement of the program. The required application for the permit has been submitted but the permit has not been issued as of this date.

3. Water Distribution

The water distribution system in Vallejo is managed by the City of Vallejo. The service area for the municipal system encompasses the city, including Mare Island, as well as a number of small communities in western Solano County, Travis Air Force Base, and some properties along the major transmission lines.

The availability of water service to meet the present and future water demand is dependent on both the amount of raw water supply and water treatment storage capacity. In addition to providing daily water needs, the City must insure adequate water to provide fire protection to the developed areas of the city. Vallejo is in an

enviable position in relation to raw water supply with ample entitlements to meet projected demand.

The three major sources of raw water supply (with maximum annual entitlements) are: the City's State License Water pumped from Cache Slough (22,800 acre-feet per year); Solano Water Project water transported from Lake Berryessa (14,750 acre-feet per year); and State Water project water via the North Bay Aqueduct (5,600 acre-feet per year). Total water entitlements, including the Vallejo Lakes System's three catchment and impounding reservoirs at Lakes Madigan, Frey, and Curry (4,350 acre-feet per year), equals 47,500 acre-feet per year or a maximum of 42.2 million gallons per day. Entitlements, however, may be subject to environmental or other constraints which might be imposed by the State or other regulatory agencies.

With the completion of the Fleming Hill Water Treatment Plant, a water treatment capacity of 42 million gallons per day is available within Vallejo. This compares to an estimated average demand of 28.2 million gallons per day by the year 2000 for the Vallejo area. Total demand at ultimate buildout, beyond the year 2020, is expected to increase only slightly.

4. Street Maintenance

Maintenance of City streets involves a large portion of the overall budget. Ways of reducing these maintenance costs are discussed in more detail in the Transportation section. These costs include street sweeping, tree maintenance, lighting, striping and maintenance of the paving itself. Good maintenance by the City encourages good homeowner maintenance and civic pride.

5. Solid Waste Collection

Solid waste collection is handled by a private firm, the Vallejo Garbage Service. Service is mandatory unless cause for exemption can be shown. Historically all garbage was taken to a landfill site in the American Canyon area which served approximately 130,000 people in Napa, Vallejo and the surrounding unincorporated areas of Napa and Solano Counties. The landfill site was closed in 1995. A transfer station on Devlin Road in South Napa County has been opened, and garbage is shipped by rail to a landfill site in the eastern portion of Washington state.

The City has also contracted with Pacific Rim Recycling to operate a residential curbside recycling program, which collects a variety of materials and sells them for reuse, thereby taking these materials out of the waste stream. The Vallejo Garbage Company operates a drop-off recycling center as well as a commercial recycling program serving residential developments with more than four units, commercial, industrial, and school sites. VALCORE, a non-profit organization, also operates a drop-off recycling center.

Finally, the City will consider changing the garbage rate system from a "flat rate" to a "per can rate" to reduce the amount of garbage that goes to the landfill. The goal of these programs is to comply with the State requirement to reduce the waste stream by 25 percent by January 1995 and by 50 percent by January 2000.

6. Fire Services

The Vallejo Fire Department provides emergency first responder services within the geographical boundaries of the city and the East Vallejo Protection District. The Department is divided into four major divisions which are responsible for the day to day operations. The Administrative Division performs functions related to budget, policy setting and management services for the Department. The Training Division is responsible for insuring that members of the Department learn and maintain skills necessary for effectively delivering service to the community. The Suppression Division consists of seven engine companies, one truck company and a shift commander on a three platoon schedule. A minimum staffing of 25 is supplemented by recall of the off-duty personnel during major incidents. The Fire Prevention Division is responsible for providing fire investigation, plan review, inspection and public education services for the Department. The City currently holds a Class III rating with ISO.

7. Police Services

The Vallejo Police Department addresses prevention through the Beat Health program, Community Based Policing projects at patrol level, delinquency reduction and youth education by the Police Probation team, and public education by the Crime Prevention Unit. The Crime Prevention Unit is also involved in the evaluation of land use proposals.

Other Services Goal: To provide an efficient and financially sound system of urban services to protect the health, safety and general welfare of Vallejo area residents.

Policies:

1. *Encourage infilling, that is, development within the urban area already served by sewer, drainage and water lines, and streets.*

2. *New development should bear the costs to extend or upgrade public services and/or provide or upgrade public facilities to serve the new development proportionately to the demand generated by the new development. It is recognized that in some instances the City may also participate in the cost to extend public services and/or public facilities to areas in which such services/facilities do not currently exist when the City makes a specific finding that such an extension will benefit the community.*

3. *Encourage revenue-generating uses on Mare Island to mitigate the costs of improving and maintaining public facilities and services on the Island.*

4. *Specific plans and Planned Development master plans should identify sites for public uses as required by the needs of the City, GVRD, VCUSD, VSFCD, Solano County and/or permitting state and federal agencies.*

5. *Prior to annexation to the City, a Specific Area Plan and Environmental Impact Report should be conducted. A cost/revenue impact study should be undertaken to determine the cost of providing public services.*

6. *Sanitary and Storm Water Systems:*

   a. *The number of new catch basins with debris traps should be minimized; drainage into wetlands or other sensitive areas should be first channeled through a sedimentation basin.*

   b. *Subdivision designs should be reviewed to minimize the amount of impermeable surface.*

7. *Water Service*

   a. *Landscaping of public facilities should feature drought tolerant species.*

   b. *The City should actively pursue a program to detect and repair water leaks and replace worn water mains.*

   c. *Subdivisions should follow the City's "Xeriscaping Guidelines for Model Homes in New Development".*

8. *Street Maintenance*

   a. *Reduced street widths with provisions for off-street parking in residential areas should be encouraged to reduce the future maintenance costs.*

   b. *The City should evaluate the street sweeping program and consider special signing and scheduling in congested areas, additional coverage around schools and high litter areas and an educational and enforcement program for litter abatement.*

   c. *Street lighting should be low energy consumptive and agreeable to neighborhood character. Midblock lighting should be reduced where safe to conserve energy and lower lighting costs.*

9. *Solid Waste Collection*

   a. *The City should establish programs which encourage recycling of materials and should initiate recycling of materials used during governmental operation.*

   b. *Comply with the recommendations in the Source Reduction and Recycling Element and the Household Hazardous Waste Element.*

10. *Fire Services*

   a. *Special consideration should be taken prior to permitting hazardous occupancies in older buildings.*

   b. *The City should encourage home improvement associations to participate in the fire prevention program offered by the Fire Department.*

11. *Police Services*

   a. *The City should encourage home improvement associations to participate in the Home Alert Program offered by the Police Department.*

b. *Encourage cul-de-sac street design which has demonstrated a lower rate of crime.*

c. *Landscape areas should provide adequate visual access to all entrances.*

d. *Provide street numbers on alleys to allow rapid identification. Encourage the use of lighted house numbers.*

e. *Defensible design techniques should be encouraged in all new developments.*

VIII. SAFETY

A. RISK DEFINITION

Risk is the chance or probability that a given event will happen, be it an earthquake, flood or fire. Clearly, it is virtually impossible to eliminate all risk from many hazards we are exposed to daily. Therefore, the community must consciously decide how much risk will be accepted.

Unacceptable risk includes hazards which pose a serious threat to life or property and where there is no requirement to abate the hazards. An example of such an unacceptable risk might be an old, earthquake vulnerable hospital located on an active fault. For the most part, these hazards are avoidable risks which can and should be mitigated in the planning or construction stages of development.

Between the extremes of the risk scale, unacceptable at one end and acceptable at the other, there are all degrees of relative risk. There are less clear cut situations such as suspected slides which may or could pose a threat to existing features or improvements. Such factors as the probability of occurrence at a site, and the importance or value of a structure or land use, result in gradation in the degree of risk unacceptability. Further toward the acceptable risk end of the scale are other presently unrecognized hazards, either because of the lack of information or capability to detect the hazard. Although there appears to be no consensus for the definition of acceptable risk, those considered most unacceptable can be identified and mitigated if possible, or restricted from future use. Those remaining risks, therefore, are placed in the category of tolerated or acceptable risk, without any rigid distinction between the two necessary. Acceptable risk is further defined as that risk for which no specific mitigation is required, other than to make the risk known. Most decisions made by the community involving the use of land include an acceptance of risk. The following factors should be considered in evaluating risk:

- Severity of potential losses: Impacts including loss of life, injury, property damage, loss of function and hidden cost should be considered.
- Risk reduction capabilities: Consideration should be given to current technological capabilities, available fiscal and manpower resources, and established priorities.
- Probability of loss: The probability of future adverse occurrences should be evaluated in light of their possible effect on structures or human activity.
- Adequacy of basic data: This is an important factor in estimating the probability of perceived hazards.

Methods of mitigating hazards most often employed fall into three categories:

- Hazard Abatement: This is the most positive means of hazard reduction but also is the most controversial since it primarily involves the elimination of an existing hazard, usually at a substantial cost to the owner. Demolition of an old, earthquake vulnerable building is an example. It can also have significant negative social impact related to possible relocation requirements of the abatement.

- Impact Reduction: This strategy promotes measures to minimize the adverse effects of future events on existing and future developments. It can involve reactive efforts such as emergency or contingency plans after a disaster; or upgrading standards to minimize possible adverse effects.

- Hazard Avoidance: Most important at the land use planning level is the strategy of avoidance. With the advanced knowledge of the various types and severity of hazard within a planning area, those land uses most compatible with the risk can be matched, thereby avoiding unacceptable risk area or limiting them to the least important land uses.

The following criteria should be used to establish priorities so that judgements can be made regarding allocations of limited funds to the most critical areas or problems.

- Significant and impending threats to human life or safety.
- Unacceptable levels of potential economic loss.
- Potential for widespread social disruption.
- Significant threats to future populations or development.
- Problems which are likely to result in minor adverse impacts.

The City has adopted an "Emergency Operations Plan" which provides for the City's prompt and effective response in a crisis situation. The Plan should be updated every two years with coordination and input from various city agencies.

B. SEISMIC HAZARDS

The City of Vallejo, including its Sphere of Influence, is in a setting of diverse geologic conditions, with an equally wide range of existing and potential hazards. With the exception of the damaging earthquake of 1898, Vallejo has been relatively free of serious seismic problems.

Ratings of seismic and other geotechnical hazards within the study area are summarized as follows:

- Seismic Shaking (bedrock sites) - Moderate
- Seismic Shaking (valley alluvium and bay mud sites) - Moderate to locally high (due to intensity amplification effects in deep, loose topsoils).
- Fault Rupture Potential - Low in most areas; somewhat higher probability along major faults.
- Liquefaction Potential - Low or absent in bedrock and older alluvial areas; moderate or possible in bay mud and younger alluvial areas.
- Tsunami Hazard - Low

- Seiches, Potential Inundation - Due to dam failure, and other secondary seismic effects - Low

- Slope Instability - Low to locally moderate hazard in west and central portions; moderate to high in east portion.

- Soil Related Problems - Moderate to locally serious for expansive soil; potentially severe settlement in bay mud deposits; slight to moderate for other soil problems.

1. Seismic Shaking

The City of Vallejo, as well as the remainder of California, is within Zone 4, representing the highest seismic risk nationally. In Vallejo, levels of seismic (earthquake) shaking are expected to be generally moderate to high with major damage probably from a maximum probable intensity of shaking of IX or X on the Modified Mercali Scale. A history of earthquake activity can be found in Appendix 1. The maximum probable earthquake is the largest quake most likely to occur on an active fault during the life of a structure, approximately 50 to 100 years.

The structure of the San Pablo Bay area is dominated by a group of northwest trending lateral faults. These are commonly referred to as the Hayward-Calaveras Fault System. Several individual faults within this group are believed to be potentially active: the Green Valley-Concord Fault, the Rodgers Creek Fault, and the Pinole Fault. The San Andreas and Hayward faults are both historically active; these lie southwest of Vallejo.

Two other major faults lie within the study area: the Franklin and Southampton Faults.

The FRANKLIN FAULT is well defined in the hills south of Carquinez Strait, but its trace is uncertain in the vicinity of Mare Island. The Draft Mare Island EIS / EIR states there is no direct evidence that the fault extends north of the Carquinez Strait. Except for the earthquake in 1898, the Franklin Fault has been relatively inactive in historic time; it should be considered potentially active. The Franklin Fault is part of the Calaveras Fault System.

The SOUTHAMPTON FAULT bisects Southampton Bay and is mapped parallel to Columbus Parkway (see Plate 1 in Appendix 1). Although it has no historic seismic activity, it may be a potentially active fault. The Southampton Fault may also be a branch of the Calaveras Fault System.

2. Fault Rupture Potential

Within the Vallejo study area there are no officially designated "active" faults. Therefore, the provisions of the Alquist-Priolo Geologic Hazards Zone Act (which establishes special studies zones under State jurisdiction for active faults) does not apply to the study area. However, the Act also will include those faults considered "potentially active" and, therefore, may have future bearing on investigation standards or building setbacks from faults. For the purpose of land use planning only, we consider the Franklin and Southampton Faults to be "potentially active". These faults are shown as a zone one-quarter mile wide on Plate 2 in Appendix 1.

Besides the Franklin Fault and the Southampton Fault, there are several minor faults within the study area that are significant for group rupture evaluation. These unnamed

faults are given informal names for prominent nearby features. They are all labeled on Plate 1 in Appendix 1.

The "Glen Cove" Fault, the "Lake Herman" Fault, and the "Sereno Drive" Fault are possibly inactive. The "Sulphur Springs Mountain" Fault is probably inactive and geologic hazards along the fault trace (such as landslides) are relatively more important than the fault itself. A more complete description of these faults is given in the Appendix 1.

Figure 10

Maximum Probable Earthquakes in Vallejo

(To be considered for academic design of most structures)

Duration Fault	Distance from Fault (Miles)	Magnitude Modified Mercali	Range of Maximum Bedrock Acceleration	Predominant Periods (Seconds)	Bracketed (Seconds)
San Andreas	22 - 35	8.0 / VIII	0.24 - 0.30	0.40 - 0.45	29 - 30
Hayward	8 - 14	6.5 / VIII - IX	0.24 - 0.32	0.25 - 0.30	18 - 20
Calaveras / Franklin	0 - 17	6.8 / VIII - IX	0.25 - 0.80 +	0.30	21 - 24

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3. Liquefaction Potential

Liquefaction, one of the most important secondary seismic hazards, can be described as a "quicksand" condition in which there is a loss of foundation support caused by a shock (usually an earthquake of significant magnitude). Important factors in determining liquefaction potential are the intensity and duration of shaking, and the presence of relatively low density fine sand and silt in an area of shallow groundwater.

The western portion of Vallejo consists of recent alluvium and bay mud of the Napa River delta and estuary. These thick unconsolidated muds are subject to possible liquefaction during strong earthquakes, amplification of seismic intensities, and provide poor foundations for structures.

Within the study area, only those portions having the highest relative liquefaction potential were identified. This was based primarily upon areas having thick alluvial deposits and probable high groundwater table (approximately less than 30 feet). Many of the alluvial areas grade transitionally into bay mud.

Alluvial areas along the Napa River tentatively identified as potential liquefaction areas include: White Slough, Chabot Terrace to Slaughterhouse Point, an area between the County Fairgrounds and Lake Chabot, the northern two-thirds of Mare Island, and the Wilson Park-Ryder Street area. The islands of the Napa River delta which are composed of bay mud probably have somewhat less liquefaction potential because of their very fine grained nature.

4. Tsunamis, Seiches, Potential Inundation Due to Dam Failure

TSUNAMIS, often incorrectly called "tidal waves", are long period ocean waves usually caused by underwater seismic disturbances, volcanic eruptions, or submerged landslides. The configuration of San Pablo Bay is such that a tsunami with a run-up of 20 feet at the Golden Gate will be attenuated in Vallejo to about 0.1 of the run-up at Golden Gate (or about two feet). The likelihood of this occurrence is about once every 200 years.

A SEICHE (pronounced "saych") is an earthquake induced wave in a confined body of water that can inundate adjacent areas. Aside from the potential shoreline damage or damage to improvements such as dock facilities and boats, the most serious consequence of a seiche would be the overtopping and possible failure of a dam. The principal water bodies within the study area which could be affected by seiches are Lake Chabot, Borges Summit Reservoir, Swanzy Reservoir, and Fleming Hill Water Treatment Plant Reservoir No. 2. Depending upon seismic circumstances, the Vallejo waterfront area along the Napa River could also be affected by seiches originating in San Pablo Bay.

The preliminary analysis of the potential height of the seiches in any of the lakes indicates that they would not exceed approximately one foot. Locally, however, they could range up to slightly greater than three feet adjacent to areas of deeper water.

The State Office of Emergency Services, since the 1971 San Fernando earthquake, has been charged with the responsibility of delineating all areas subject to inundation due to dam failure (for all those dams under State jurisdiction). The State Division of Dam Safety of the Department of Water resources is currently identifying those dams most susceptible to seismically caused failure, mainly according to their age, type of construction and present physical condition.

Those dams which are not believed to be seismically vulnerable are certified for continued use by the State. Some are certified with a limitation on the maximum water level, if there is some doubt as to the dam's stability.

All of the reservoirs in the city are certified to operate at full storage with the exception of Lake Chabot, which has a restriction during the runoff season requiring that the dam spillway gates be maintained in their full open position.

Seismic Hazards Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.

Policies:

1. *Adopt, maintain, review (whenever necessary), and enforce adequate standards and criteria to reduce or avoid all levels of seismic or other geologic risk, whether it be unacceptable, tolerated or avoidable risk.*

2. *Evaluate all new development for potential seismic hazards using the Geotechnical Hazards Map (Plate 1 in Appendix 1) as a guide for determining the need for additional geologic investigation.*

3. *Evaluate the compatibility of existing zoning as well as future land use allocation, with known geologic risk zones, or those which may be identified in the future.*

4. *Recognize the need to provide greater safety for important or critical use structures (such as hospitals, schools, public assembly facilities, dams and utility corridors) through careful site selection, appropriately comprehensive site investigation and enforcement of applicable codes and regulations.*

5. *Prohibit development of important or critical use structures in any active or potentially active fault zones, unless no other more suitable site can be located, and the site is shown to be safe for the intended use.*

6. *Advocate improved seismic safety programs for schools and promote greater general public awareness of all types of geotechnical hazards.*

7. *Improve interjurisdictional cooperation and communication, especially in regard to seismic safety aspects related to dams, reservoirs, state highway and freeway structures, regional fault studies, legislative matters, and disaster response or emergency plans.*

8. *Advocate improved earthquake insurance programs for the city.*

9. *Existing and prospective property owners should be made aware of the potential hazards and their implications.*

10. *Seismic Shaking:*

    a. *A systematic survey should be conducted to identify those older structures most vulnerable to earthquake damage. Recommended guidelines for determining priorities are included in Appendix 1.*

    b. *There should be continued compliance with Chapter 12.07, Seismic Hazard Identification and Mitigation Program for Unreinforced Masonry Buildings, of the Vallejo Municipal Code.*

    c. *Existing medium and high rise buildings (over three stories) should be evaluated in terms of evacuation procedures and fire control.*

    d. *Vital facilities, including fire and police stations, hospitals and communication centers within the high risk (C or D on Plate 2, Land Use Capability Map, in Appendix 1) zones should be evaluated regarding their compliance with current structural standards for a seismic design. Emergency power generators at these facilities should also be evaluated for seismic safety.*

e. At the discretion of the Building Official, certain of the more important or critical use structures in Groups I, II and III (such as hospitals, schools, highrise buildings and fire stations, etc.) should be specified as requiring more conservative seismic design parameters utilizing the maximum credible earthquake (rather than the maximum probable earthquake). Other less important uses in Groups I, II, and III (such as certain utilities, roads, and small isolated dams) could be designed utilizing the maximum probable earthquake, as are the ordinary types of construction in Groups IV and V.

f. Future detailed study of the Southampton Fault should be undertaken, including subsurface exploration between the Garthe Ranch and Blue Rock Springs Creek, geophysical profiling of Southampton Bay and Carquinez Strait to confirm the continuity of the fault zone, microseismic monitoring along the fault, and a triangulation survey of the fault trace to detect possible fault creep.

11. Fault Rupture Potential:

a. At the discretion of the City Engineer or Building Official, all development (or only certain of the more important land uses) within the tentatively classified potentially active fault zones (the Franklin and Southampton Faults) may be required to comply with the State requirements for the evaluation of the fault rupture hazard. The State criteria prohibits construction of habitable structures across such potentially active faults (or multiple fault lines within the zone) and require a minimum setback of 50 feet from such faults, unless specifically approved by a registered geologist. No habitable structures should be placed across or near any fault trace without an adequate construction setback.

b. Future studies of the regional fault hazard, by various governmental agencies or private consultants, may require revision of the delineated special study zones (either enlarging, reducing, or even eliminating all or part of them).

12. Liquefaction Potential: The City should consider for adoption guidelines for evaluating liquefaction potential for critical use structures, such as hospitals. The criteria should include size class, particle diameter, and density of the soil.

13. Tsunamis, Seiches, Potential Inundation from Dam Failure: Routine monitoring of all water storage facilities for leakage or damage is advisable, on a periodic basis, particularly after an earthquake.

C. SLOPE INSTABILITY

The existence of steep slopes places both financial and environmental restrictions on building. First, as the slope increase, so do the costs involved for engineering, grading and construction. Second, all of the environmental considerations that are present with any development are increased in areas of steep slope, including runoff, erosion and sedimentation, slumping, and sliding. When combined with unstable soils, these problems become more critical.

1. Landslides

Most of the development portion of the study area is underlain by sedimentary bedrock consisting of sandstone and shale. These units are part of the "Great Valley Sequence". The sandstone usually has good stability, while the shale is often weaker

and tends to be landslide prone particularly where bedding planes dip parallel to the hill slope (dip slope beds).

The bedrock of the Sulphur Springs Mountain area in the northeastern suburbs of Vallejo is composed of a heterogeneous assemblage of graywacke, chert, shale, and serpentine of the Franciscan Formation. This unit is highly variable in engineering properties, ranging from active landslides and expansive soils to fairly stable ground.

The largest landslide (320 acres) mapped within the study area is in the Sulphur Springs Mountain, north of Columbus Parkway, between St. John's Mine Road and Interstate 80. A similar landslide northeast of Columbus Parkway, just north of Blue Rock Springs Park, is approximately 81 acres in size.

Immediately west of St. John's Mine, a third large composite landslide has been recognized. The portion within Solano County is about 189 acres. Together, these three landslides total 591 acres, or nearly one square mile. At present, the landslides are undeveloped and no structures are known to be in jeopardy.

Landslides move under the force of gravity. The nature of the movement is controlled by the type of earth materials involved, the internal friction of the slide mass, and the slope over which the mass is moving. Triggering events for landslides include:

- Earthquakes directly setting the earth mass in motion.
- Heavy precipitation or abnormal groundwater that reduce internal friction.
- Natural erosion which may undercut stable slopes.
- Works of man, commonly grading or other earthmoving, which destroy the natural equilibrium.

Landslides in the planning area are considered tolerated, avoidable or acceptable risks and will require careful planning and development control to avoid slope stability problems.

2. Mudslides, Slumps and Erosion

Mudslides, slumps and erosion are the shallower type of slope failure and are triggered by surface or subsurface water. The risk from the slope problems can be avoided by careful land use planning, engineering design and development practice.

Slope Instability Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.

Policies:

1. *Require special engineering studies in areas of known slope instability.*

2. *Avoid development on known unstable slopes where engineering design cannot ensure a safe living condition.*

3. *Identify and appropriately zone areas of unstable soils and/or geologic formations in areas identified as having slopes of over 20% and regulate density and siting in accordance with the natural carrying capacity of the land.*

D. SOIL RELATED PROBLEMS

In 1977, a soil survey was issued by the Soil Conservation Service of the U.S. Department of Agriculture for Solano County, including the developed portion of the City of Vallejo and Mare Island. The report discusses the soil limitations for shallow excavations (to 5 feet), dwelling foundations (with and without basements), road and street construction; sanitary landfills; and soil properties such as permeability, erodibility, shrink-swell potential, and corrosivity.

A severe limitation does not necessarily indicate a particular activity cannot be done, but in order to overcome these limitations the cost and other factors may make the project infeasible.

1. Expansive Soils

Expansive soils are those which undergo a significant and reversible change in volume resulting from a change in moisture content. They present a general engineering and construction problem in the Vallejo area.

Although the presence of expansive soil results in higher foundation costs, it is not considered to be an important land use constraint when compared with other geologic hazards.

2. Settlement

The sinking (or settlement) of a structure, fill prism or other imposed load is usually the result of compaction or consolidation of the underlying soil, due to its low density and compressible nature. Commonly, such soils can be found in the alluvial valley areas and where old pits or gullies have been filled in with trash and loose soil. Within the study area, the bay mud deposits are of particular concern because of their low bearing capacity.

Severe foundation damage has been reported in several heavy structures on the bay mud deposits along the waterfront area of the city.

3. Bay Mud Deposits

The western half of the Vallejo planning area is underlain by bay mud. It has numerous engineering problems, such as very low bearing strength, high compressibility, differential settlement under load, down drag of pilings under structures, large total settlement of structures, and possible moderate to high potential for liquefaction during seismic shaking. The Napa River delta has a thickness of about 100 feet of mud. White Slough in northwestern Vallejo has about 20 feet of mud, while much of Mare Island is underlain by 40 to 80 feet of mud. (See Appendix 1 for maps showing thickness and bottom contours.)

4. Groundwater Conditions

The hazards from groundwater relate generally to sites having shallow water tables or actual surface seepage which may cause foundation or slope stability problems. Within

the alluvial valley areas, one of the most serious potential problems is associated with the seismically related hazard of liquefaction.

Vallejo is located at the southern-most end of the Napa River. The greater planning area contains several small hydrologic units. Groundwater occurs in the islands of the Napa River delta primarily as a static water table that fluctuates with the tide. Presumably, most of this groundwater is brackish and not potable. The combination of bay muds and a very high water table in the delta area can result in very severe foundation problems.

Groundwater in the mainland area of Vallejo occurs primarily within the alluvium and the upper portion of the underlying bedrock where the bedrock is weathered, fractured, and permeable. Known seeps, springs, or groundwater problems have been mapped and a list is included in Appendix 1.

Soil Related Problems Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.

Policies:

1. *Special engineering studies should be required for areas underlain by unengineered fill. Some of these areas are shown on Plate 1 in Appendix 1.*

2. *Special foundation design, including pile foundations, may be required in the area underlain by bay mud.*

3. *Soil studies required for new development should include a discussion of and methods for reducing groundwater hazards.*

E. FLOODPLAIN HAZARDS

1. Floodplain Area and History of Flooding

A major portion of Vallejo's western boundary consists of low lying mud flats and marshlands adjacent to the Napa River. Although much of the areas within the historic floodplain has been filled and/or diked, some areas are still subject to seasonal flooding. The White Slough area, once protected with levees, has been inundated since the winter storms of 1977-78 as a result of levee failure. In January 1982, a combination of heavy rains and high tides caused significant flooding in several areas, including the Flosden and Lake Dalwigk areas and in the historic floodplain around Nebraska and Sutter-Napa Streets. The storm event exceeded the 100-year event which is used for sizing facilities in the Vallejo Sanitation and Flood Control District.

2. Flood Hazard Reduction

A flood hazard study was prepared for the Federal Insurance Administration (U.S. Department of Housing and Urban Development) by Towill, Inc.. Four drainage areas are evaluated in the report, Chabot, Austin Creek, Lemon Street, and White Slough. Maps prepared by the Food Insurance Administration based on the information in the report indicate the boundaries within which flood insurance is required when certain

federally subsidized programs, e.g. FHA loans, are used. The maps do not necessarily define the floodplains.

The flood insurance program is subsidized by the federal government and in exchange, the City is required to have a floodplain management ordinance. In summary, the ordinance requires prospective developers to ensure that new construction in the designated floodplain will not increase the depth and velocity of flooding on the upstream and downstream floodplain.

Flood control planning is the joint responsibility of the City of Vallejo and the Vallejo Sanitation and Flood Control District. By working closely together, the two entities can reduce the risk of flooding for existing structures and prevent unsafe construction within the floodplain.

Floodplain Hazards Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.

Policies:

1. *Require strict compliance with the Flood Damage Protection Ordinance of the City of Vallejo.*

2. *In the White Slough area, all new development, infrastructure improvements, and enhancement projects should be evaluated for consistency with Assembly Bill 719, the White Slough Protection and Development Act.*

3. *Evaluate all new developments to determine how peak runoff can be delayed using such measures as detention or retention basins, permanent greenbelt areas, temporary underground storage, permeable paving and roof top ponding.*

F. FIRE HAZARD AREAS

Wildland fires cause major damage to natural resources, life and property. Most of this damage is caused by a small number of conflagrations during a few days of critical fire weather that occurs annually. The frequency of these fires varies from place to place depending on the severity of the fire hazard.

Using a system developed by the State Department of Forestry, based on vegetation, weather and slope, the open land around Vallejo was classified a moderate fire hazard. To reduce this hazard, new developments are required to provide firebreaks using fire resistant, irrigated landscaping, between new construction and open grassland. Also, the Fire Prevention Division has an active weed abatement program which covers the entire city.

Vallejo has several characteristics which present a higher than normal fire hazard. During the summer, there are extended periods of hot, dry weather with an average wind speed in excess of seven knots. A large percentage of the city is older construction which does not include separation with fire resistive materials. Two railroad lines and two interstate highways bisect the city and the city has eight miles of waterfront properties, all of which can hinder easy access to a fire. The steep topography can also create an access problem and, coupled with the high average wind speed, can facilitate the spread of fire.

Fire Hazards Goal: To protect life, property, and public well being from seismic, floodplain, and other environmental hazards and to reduce or avoid adverse economic, social, and physical impacts caused by existing environmental conditions.

Policies:

1. *Use the Vallejo Fire Department Master Plan in evaluating all planning proposals.*

2. *Actively enforce provisions relating to code violations and insufficient maintenance which may contribute to arson or accidental fires.*

3. *Continue irrigated, fire resistant landscape policy in new development.*

IX. NOISE

A. EXISTING AND PROJECTED NOISE LEVELS

To describe the existing noise climate of Vallejo over 100 measurements were made at representative locations throughout the city and then a computer program, based upon the noise measurements and other parameters including traffic volumes, was run. A Noise Contour Map was drawn using five dBA contour intervals. The 60 dBA noise contour is shown on the Map in Appendix 2. This is the noise contour that will be used as a criteria in evaluating the design of future residential developments.

This map shows that the 60 dBA noise level is exceeded in many areas at this time. However, because transportation noise is so commonplace and people realize it is a difficult problem to solve, complaints are rarely filed about transportation noise. The authority to set noise standards for vehicles rests with State and Federal agencies and with the City.

Two basic noise descriptors are used here: L_{10} dBA is the sound level exceeded ten percent of the measurement period and L_{50} dBA for fifty percent of the measurement period. The peak hour L_{10} dBA levels are used to define planning criteria because they correlate well with human annoyance. The L_{50} dBA levels are used to indicate the ambient noise levels.

Dividing vehicular noise into components, it is found that, for automobiles, the noise from tires and friction dominates over that from the engine and exhaust at all speeds. Trucks and motorcycles, however, have louder engine and exhaust components than tire and air friction noise. Truck noise is a result of the extremely heavy loads, large engines, and large number of tires. Vehicular noise levels are also a function of the age and level of maintenance of the vehicle.

In a study by the California Highway Patrol, it was found that if automobiles are kept in proper working order, the present noise levels can be reduced 10 dBA at 35 mph or less (affecting only 3.3% of all automobiles) and reduced 9 dBA at speeds over 35 mph (affecting less than 5% of all automobiles).

The City cannot practically enforce the motor vehicle code provision on individual vehicle noise levels. This requires measurement of individual vehicles under very stringent conditions including a large open space without other conflicting sources. The California Highway Patrol is equipped to perform this function, but their staff is limited. Local police can enforce the muffler laws which state that the exhaust noise should not be the primary source of noise from a motor vehicle.

Noise levels are linearly proportional to the speed and vary according to the type of road surface. For each 10 mph that speed is reduced, the noise from automobiles is reduced about three dBA. Traffic moving in a smooth, even flow is quieter than traffic that has to stop and start. Progressing lights so that vehicles can pass through a section of town without having to stop can reduce noise levels by up to 4 dBA at intersections.

A hilly terrain can provide shielding in some areas and in others can increase noise levels. Hilly roadways over two percent grade have high noise levels due to acceleration on the grade.

The noise downwind from a noise source is louder than upwind. Since Vallejo has a wind pattern dominated by westerly winds, properties to the east of a roadway will be impacted a higher percentage of the time than those on the west.

Proper planning can reduce the impact of noise on adjoining properties. Along limited access roads noise abatement walls can be used. On roads like Sonoma Boulevard, noise abatement can only be accomplished with measures to reduce vehicle noise. Where sufficient land is available, buffer strips with landscaped berms or deeper setbacks can be used.

Some land uses are more sensitive to high noise levels than other uses. In residential areas, the backyard is usually more noise sensitive than the front yard. Thus, if a roadway runs along the back of a property, the relevant criteria would be exterior as opposed to interior noise levels. For property fronting a roadway, the most important criteria are the interior levels for the rooms closest to the roadway. For homes of normal construction, if the exterior criteria are satisfied, the interior criteria will also be satisfied. For commercial and industrial areas, the interior criteria would normally be applied.

Other sources of vehicular noise that have generated complaints include refuse collection trucks and construction equipment. Both of these are subject to limited hours of operation: 5:00 a.m. to 9:00 p.m. for refuse collection trucks and 7:00 a.m. to 6:00 p.m. for construction equipment. New technology in mufflers and compressor design has reduced the noise levels of new vehicles. As the older equipment is phased out, the number of complaints can be expected to lower. Also, with respect to construction equipment, the movement of such heavy equipment can be routed through commercial and industrial areas instead of residential areas.

Certain land uses are inherently noisy. A car wash or a use which requires a large refrigeration unit are examples. To prevent problems from such sources, it is important to allow them only where their noise will not be disturbing.

Plate 3 in Appendix 2 shows the predicted L_{10} 60 dBA noise contours for 1985. (A complete set of contours in 5 dBA steps is available for public use at Vallejo City Hall in the Planning Division).

Future noise levels in the city are fixed point sources and can be controlled by utilizing new noise abatement technology and enforcing the noise ordinance. A law has been enacted to control noise from future new vehicles. The complete benefits of the law will be delayed several years until the older vehicles are phased out.

The noise impact along the major roads will increase. The impact zone around the State freeways will also increase slightly. The same impact will exist then as now unless residential properties are removed or noise barriers built. Any new construction along these routes should be designed to result in lowered interior noise levels.

The noise levels along the other major roadways will increase two to four dBA because of an increase in traffic. The impact will increase substantially along certain roadways, such as Curtola Parkway and Rollingwood, because of a projected large increase in traffic. Planned improvements to roadways, such as I-780 (State Route 141) and State Route 37, will have an impact unless consideration of noise abatement occurs during the design phase.

The improvement of these roads will benefit other streets in Vallejo, such as Sonoma Boulevard, by drawing traffic away from them. The effect will be that traffic, as well as noise on Sonoma Boulevard will increase only slightly.

B. EFFECTS OF NOISE ON PEOPLE

The basic effects of noise on the community fall into three categories: physical effects, subjective effects and behavioral effects. The basic physical effect of excessive noise is hearing loss. As these levels must be extremely high (90 dBA or greater) and the person must be exposed continuously to these high levels to produce damage, hearing loss is not a relevant problem in most communities.

On the other hand, subjective effects of noise particularly loudness and annoyance, are especially relevant. Perceived loudness varies with frequency, band width and intensity. Impulsive and continuous sound differ in their stimulation of the human auditory system and the perception of loudness. Impulsive noise, in general, is more disruptive than continuous sound levels within the community.

The measurable physical aspects of sound that control the perception of community annoyance are the spectral content and level, the spectral complexity, the duration of sound level increase, and the increase in sound level by impulsive sounds. High frequency noises are perceived as more annoying than low frequency sounds.

Community annoyance response is dependent on the existing noise environment when evaluating the response to new noise factors. For example, rural and urban communities have widely differing noise climates and would therefore respond differently to a new intrusive noise source.

Social and psychological factors involved in the community perception of annoyance vary widely but may include such diverse factors as the source of the sound and its economic or social significance to the community and the income level and social expectation of the receptor community. Noise complaints are heard more frequently from affluent communities, but this may be a reflection of their knowledge of political power and organization abilities rather than a reflection of lower tolerances.

Land use of the area by the neighborhood also affects community response. Residential areas, schools, hospitals, public facilities, and recreational areas are perceived as being more noise sensitive than industrial or commercial areas. Noise level tolerances are much lower for these sensitive areas. Annoyance thresholds also show a diurnal pattern, night time noise in residential areas is considered very undesirable. Tolerances also differ between an indoor and outdoor activity, the indoor being the most sensitive.

Noise can interfere with behavioral factors of communications and sleep. Normal speech and most other communication activities are carried out in the 60 dBA range. The human vocal apparatus has a limited range of effectiveness, efforts made to speak over intrusive noise result in loss of intelligibility and speech effectiveness. An indoor sound level of between 50 and 60 dBA is acceptable for conversational purposes, higher levels intrude and cause complaints about neighborhood noise.

Interference with sleep is most often cited as the reason for dissatisfaction with neighborhood noise levels. Over a prolonged period, the sleep loss and resulting fatigue can have serious consequences. Sound level tolerances at night or during sleep are much more stringent than at other times.

Noise can intrude on sleep without awakening the noise recipient. Studies indicate that interior levels in excess of 35 dBA increase the amount of time required to fall asleep, shortens the intervals of deep sleep appreciably, and frequently produces a sense of fatigue upon

awakening. Subjects varied widely in their response to sound stimulus while sleeping. Approximately 10% showed disturbance at 40 dBA, while 60% were disturbed by a sound level of 70 dBA.

Figure 11

Maximum Allowable Noise Levels from Construction Equipment

Equipment	Peak Noise Level in dBA at 50 Feet
Earthmoving	
Front loader, backhoe, dozer:	75
Tractor, grader, truck, scraper, paver:	80
Materials Handling	
Concrete mixer, crane, concrete pump, derrick:	75
Stationary	
Pumps, generators, compressors:	75
Impact	
Pile drivers:	95
Jack hammers:	75
Rock drills, pneumatic tools:	80
Other	
Saws, vibrator:	75

Figure 12

Maximum Noise Levels (dBA) for Land Use Evaluation

Zone	Time	Maximum Sound Level (dBA) Outdoor L50	Outdoor L10	Indoor L50	Indoor L10
Rural Residential, Medical	10 pm - 7 am	45	55	35	45
	7 am - 10 pm	50	55	40	45
Other Residential	10 pm - 7 am	50	60	40	50
	7 am - 10 pm	55	60	45	50
Street-Oriented Commercial	10 pm - 7 am	65	75	60	65
	7 am - 10 pm	70	75	60	65
Non-Street-Oriented Commercial	10 pm - 7 am	55	70	45	60
	7 pm - 10 am	65	70	55	60
Heavy Commercial, Industrial	10 pm - 7 am	65	75	60	65
	7 am - 10 pm	70	75	60	65

C. NOISE REDUCTION

The following policies fall under the jurisdiction of several municipal departments and State agencies. The Building Division is responsible for controlling interior noises, the Planning Division for fixed sources and for land use planning, the Police Department and California Highway Patrol for traffic noise. Because traffic is the primary source of noise in Vallejo, most of the following policies relate to abatement of existing traffic noise and land planning to reduce the impact of noise on sensitive land uses.

Noise Goal: To provide for a more pleasing acoustic environment for the city by controlling noise levels in a manner that is acceptable to the residents, reasonable for commercial and industrial land uses, and practical to enforce.

Policies:

1. *The Police Department should actively enforce speed limits.*

2. *Roadways should be kept in good repair and new surface material should be evaluated in terms of noise generation.*

3. *Signals along major roadways should be synchronized for smoother flow of traffic.*

4. *For properties that back up to a major traffic source such as I-80, noise abatement walls, deeper setbacks, and landscaped berms should be considered.*

5. *Truck routes should be on streets that are abutted by commercial development and should be well signed.*

6. *The maximum L_{10} dBA noise levels for exterior and interior environments allowed by zoning district for new construction are shown in Figure 12. The exterior criteria should be applied at the property line and the interior criteria in the room nearest the noise source. The interior criteria will depend upon the noise reduction for the particular building. If the building is not air conditioned, this reduction should be obtainable with the windows open. These criteria will apply to a use being proposed in a high noise area or to a high noise use being proposed anywhere in the City.*

7. *No person should produce noise that exceeds the ambient noise level (L50) by more than 5 dBA at the nearest property line (Figure 12).*

8. *Noise from construction and maintenance equipment should be limited to the levels shown in Figure 11.*

9. *Monitor any proposals to expand the Travis Air Force Base, or the Napa County Airport in terms of increased noise levels in Vallejo.*

X. AIR QUALITY

A. INTRODUCTION AND PURPOSE

An Air Quality Element is described in the State General Plan Guidelines as an optional element that cities and counties may wish to adopt. The Vallejo General Plan serves primarily as a policy document, with each goal area having several policies that work towards achieving the goal. The City's adoption of an Air Quality Element makes it the City's policy to protect the health, safety, welfare, and environmental quality of Vallejo and the larger Bay Area by promoting community development which is compatible with air quality standards and minimizing the impact of future development on air quality.

The environmental impacts of adoption and implementation of the Air Quality Element were assessed in two areas: air quality and transportation. The air quality impact of the project were found to be beneficial. The policies within the Element were estimated to be able to reduce the new air pollutant emissions associated with future growth in Vallejo by ten percent.

The policies contained within the Element also have a beneficial impact on transportation within Vallejo. In particular, the adoption of a Transportation System Management (TSM) ordinance covering major new employers or employment centers improve transportation conditions in Vallejo, especially for commuters during peak periods. Concerted application of TSM strategies could potentially reduce areawide trip demand by six percent.

In a larger sense, the Air Quality Element is part of the regional strategy for improving air quality. While air quality is often regraded as a regional problem, local land use and growth decisions by cities and counties will profoundly affect the success of whatever technology is available regionally to combat air pollution. The Bay Area Air Quality Management District (BAAQMD) has adopted a resolution urging cities and counties within the nine-county Bay Area to adopt Air Quality Elements.

B. EXISTING AIR QUALITY CONDITIONS

1. Air Pollution Climatology

The amount of a given pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major factors affecting transport and dilution are wind, atmospheric stability, terrain, and, for photochemical pollutants, sunshine.

Vallejo lies on the north side of the Carquinez Strait, a sea level gap in the coastal mountains separating the Pacific Ocean from the Sacramento / San Joaquin Valley. In spring and summer, strong and persistent winds blow eastward through the Carquinez Strait. In addition to spring and summer seabreezes, Vallejo is exposed to sometimes strong winter winds blowing from the east through the Carquinez Strait. These winds occur when strong high pressure exists inland, and frequently brings cold and foggy weather as tule fog filing the inland valley is transported into the Vallejo area.

Atmospheric stability refers to the tendency of the atmosphere's thermal layers to suppress or promote mixing of pollutants. The occurrence of high atmospheric

stability, known as inversion conditions, severely reduces vertical mixing of pollutants. Atmospheric stability is measured in the Bay area twice daily by weather instruments released at Oakland Airport. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of the time in both the morning and afternoon. In winter, surface-based inversions occur in the morning hours bur frequently are gone by afternoon.

Terrain does not influence air quality at Vallejo as much as it does on other parts of the Bay Area because topography does not provide shelter nor restrict dilution of pollutants as in other areas. When compared to other parts of the Bay Area, the potential for air pollution in Vallejo is moderate. Ventilation is normally good so that locally generated pollutants are carried either northward into the Napa Valley or eastward into the Sacramento Valley.

There are two weather patterns in Vallejo that represent adverse conditions for air pollution. The first occurs primarily in summer and fall when high pressure over the Pacific Coast diminishes the seabreeze. Under this regime, temperatures are warm, winds light, and an elevated inversion restricts vertical dilution. These conditions result in peak ozone concentrations and typically last for three to five days. The second weather pattern that represents adverse conditions for air pollution in Vallejo is periods of high pressure in the winter. Light or calm winds combined with a ground-based radiation inversion severely restrict dilution of pollutants in the evening and night hours. Under these conditions emissions from automobiles, together with fireplace and woodstove emissions, cause peak concentrations of carbon monoxide. These conditions occur perhaps two to four times per winter, and last typically for two to four days at a time.

2. Air Pollution Standards

The Mulford-Carrell Act of 1969 and the Clean Air Act of 1970 established state and federal air quality standards for several pollutants. These standards are divided into primary standards, designed to protect the public health, and secondary standards, intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. The state and federal standards are summarized in Figure 13.

Figure 13

Federal and State Ambient Air Quality Standards

		Federal	State
Ozone	1-hour	0.12 PPM	0.09 PPM
Carbon Monoxide	8-hour	9.00 PPM	9.00 PPM
Nitrogen Dioxide	Annual	0.05 PPM	-----
	1-hour	-----	0.25 PPM
Sulfur Dioxide	Annual	0.03 PPM	-----
	24-hour	0.14 PPM	0.04 PPM
	1-hour	-----	0.25 PPM
Particulates	AGM	50.00 ug/m3	30.00 ug/m3
Lead	30-day average	-----	1.50 ug/m3
	3-month average	1.50 ug/m3	-----

3. Past and Current Air Quality in Vallejo

The Bay Area Air Quality Management District operates a network of permanent air quality monitoring sites throughout the Bay Area. The District has for several years operated a multi-pollutant site in Vallejo within the Solano County Office complex at Tuolumne Street and Solano Avenue. During the five-year period from 1990-1994 the state ozone standard was exceeded at the Vallejo monitoring site from 0 to 3 days per year. The more stringent state standard was exceeded from 0 to 9 days per year. The one-hour carbon monoxide standards were not exceeded during the period 1990-1994 in Vallejo. Violations of the state and federal eight-hour standards were recorded one time during that period. No trend in maximum in eight-hour concentrations is indicated by the data.

Figure 14

Vallejo Air Pollutant Summary, 1990-1994

Pollutant	Standard	Monitoring Data by Year 1990	1991	1992	1993	1994
Ozone						
Highest 1-hour average, ppm	0.09	0.11	0.11	0.10	0.11	0.10
Number of standard violations		2	2	1	3	2
Carbon Monoxide						
Highest 1-hour average, ppm	20.0	12.0	13.0	11.0	12.0	NA
Number of standard violations		0	0	0	0	
Highest 8-hour average, ppm	9.0	9.0	9.6	6.6	7.9	6.5
Number of standard violations		0	1	0	0	0

4. Regional Air Quality Planning

The federal Clean Air Act requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. These plans must be submitted to and approved by the U.S. Environmental Protection Agency (EPA). In California, the state implementation plan consists of separate elements for different regions of the state. SIP elements are generally developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay Area, SIP document preparation has been a coordinated effort involving three regional agencies: BAAQMD, ABAG, and MTC.

- Federal Requirements

  The federal Clean Air Act imposes deadlines for achieving the federal ambient air quality standards. These deadlines vary according to the severity of existing air quality problems. The San Francisco Bay Area was recently reclassified from a moderate nonattainment area to a maintenance area for the federal ozone standard. The urbanized portions of the San Francisco Bay Area are presently categorized as moderate nonattainment areas for the federal carbon monoxide standards. The Bay Area is currently not classified for the federal PM_{10} standard.

The BAAQMD believes that the San Francisco Bay Area has achieved the federal carbon monoxide and PM_{10} standards, and has requested redesignation to an attainment status. Final action on the carbon monoxide redesignation request is not expected until sometime in 1996. A formal designation of the San Francisco Bay Area as being in attainment of the federal PM_{10} standard is also expected to occur soon.

- State Requirements

The California Clean Air Act of 1988 requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The State Air Resources Board is responsible for developing a plan for meeting state PM_{10} standards.

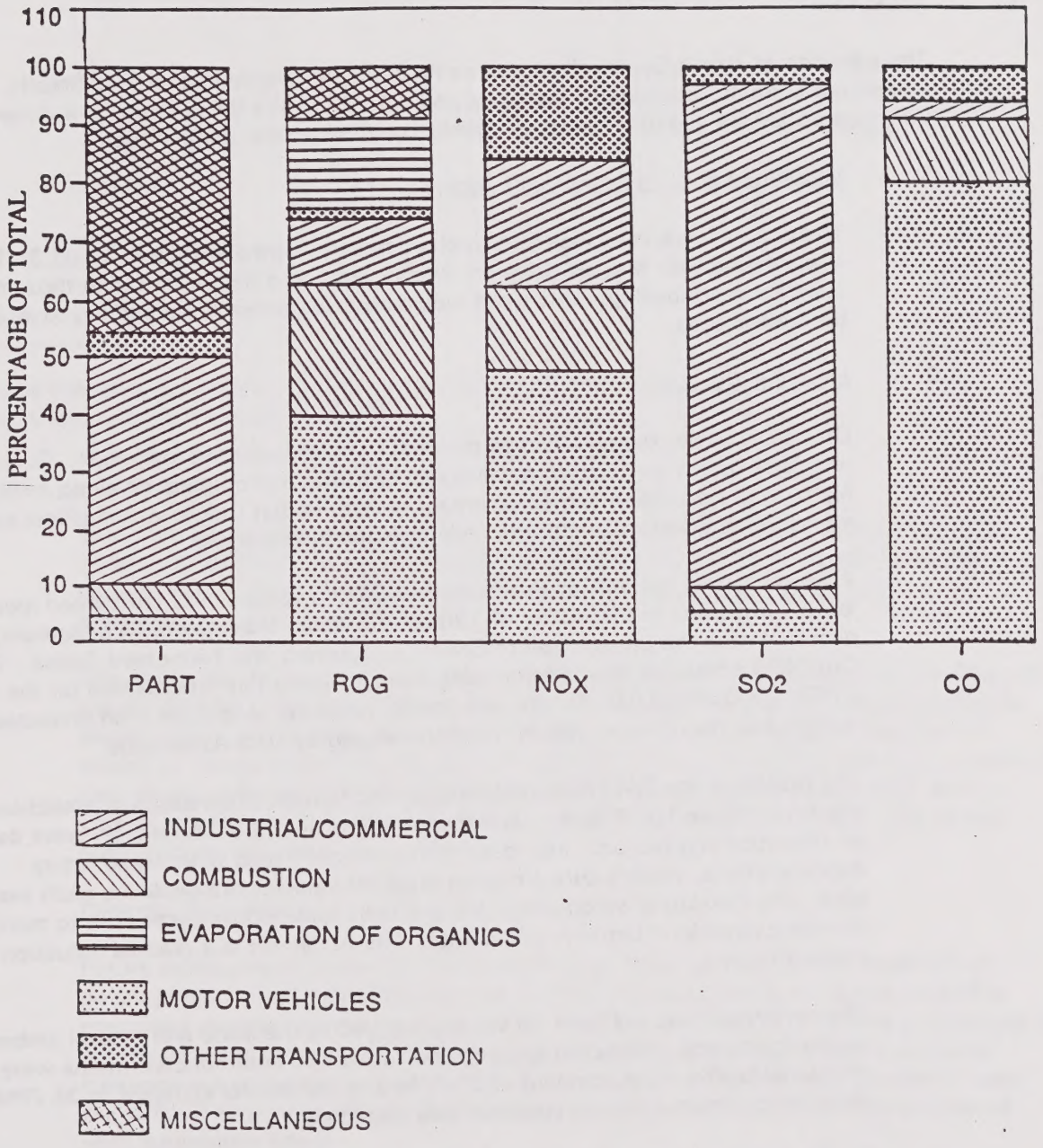
The California Clean Air Act does not set specific deadlines for achieving state air quality standards. Instead, attainment is required as expeditiously as practicable, with various mandated emission control program requirements based on the nonattainment classification for ozone and carbon monoxide. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard. Urbanized portions of the Bay Area were previously classified as moderate nonattainment areas for the state carbon monoxide standard, but are now classified as having attained the state standard. The Bay Area also is classified as a nonattainment area for the state PM_{10} standard.

5. Air Pollution Sources

Vallejo contains a multitude of air pollution sources. The combustion of fuel for space and water heating, industrial processes and commercial uses is one such pollutant source. The evaporation of fuels and solvents, incineration, fires, agricultural tilling and pesticide uses are other examples of typical pollutant sources. The largest single source of pollutants is vehicles, which in Solano County (as of 1990) are responsible for 80 percent of the emitted carbon monoxide, 48 percent of the emitted oxides of nitrogen, 40 percent of the emitted hydrocarbons, and 5 percent of the emitted particulates and sulfur dioxide. Figure 15 shows graphically the contributions of different source types to total emissions for the BAAQMD portion of Solano County. A similar distribution would be expected to exist for the City of Vallejo.

Figure 15

Sources of Pollutants in Solano County



6. Sensitive Receptors

The BAAQMD defines sensitive receptors as those facilities most likely to be used by the elderly, children, infirm, or persons with particular sensitivity to air pollutants. Examples are hospitals, schools and convalescent homes. Such sensitive receptors are located throughout Vallejo.

C. ANALYSIS

The adoption of an Air Quality Element has no direct air quality impacts. Indirectly, the adoption and implementation of the goals and policies within the Element would have an influence on the air quality impacts of development under the General Plan.

1. Population and Employment Projections

The population and employment projections are shown in Figures 2 and 3. These numbers indicate that employment should grow at a higher rate than those for population or housing. This trend would tend to decrease commuting to jobs outside the Vallejo area.

2. Local Air Quality

On a local scale, the pollutant of greatest interest is carbon monoxide. Concentrations of this pollutant are related to the levels of traffic and congestion along streets and highways. Population and employment growth within Vallejo would affect carbon monoxide concentrations, particularly at major intersections.

As described in the previous section, BAAQMD's special study of carbon monoxide levels conducted in the winter of 1986-1987 found that maximum concentrations occurred near the intersection of Sonoma Boulevard and Tennessee Street. The CALINE-4 computer simulation model was applied to this intersection for the years 1989, 2000 and 2010. Future year traffic volumes, consistent with projected growth numbers at that time in Vallejo, were developed by DKS Associates.

The results of the CALINE-4 modelling for the Sonoma/Tennessee intersection are shown in Figure 16. Future year concentrations near the intersection were determined by two opposing factors. Increased traffic volumes tend to increase future concentrations, while future emission rates for vehicles are declining each year as older, more polluting automobiles are gradually replaced by autos built to more stringent emission control requirements. The net effect is a gradual reduction in concentrations.

The concentrations in Figure 16 were compared to the state and federal ambient air quality standards. Predicted existing and future one-hour concentrations were compared to the state standard of 20 PPM and the federal standard of 35 PPM. No violation of either one-hour standard was predicted.

Predicted eight-hour concentrations in Figure 16 were compared to the state and federal standard of 9 PPM. The predicted concentration in 1989 exceeded the state and federal standard, but concentrations in 2000 and 2010 were slightly below the state and federal standards. The effect of reduced auto emission factors is sufficient to overcome the opposing effect of increased traffic volumes.

Figure 16

Past and Projected Carbon Monoxide Concentrations at the Sonoma Boulevard/Tennessee Street Intersection, in parts per million

Year	Maximum Predicted Concentration	
	1-Hour Average	8-Hour Average
1989	14.1	10.8
2000	11.6	8.9
2010	11.5	8.8

1-Hour State Standard is 20 PPM, Federal 1-Hour Standard is 35 PPM.
8-Hour State and Federal Standard is 9 PPM.

Since the intersection analyzed likely is the location of highest concentration within Vallejo, concentrations at other intersections would be lower. It appears that the carbon monoxide air quality standards will be attained within Vallejo with current emissions controls for automobiles.

The projected carbon monoxide concentrations in Figure 16 do not reflect the effect of the Air Quality Element. The Element contains a policy of reducing carbon monoxide levels in the downtown area through promotion of TSM, bicycle/pedestrian/transit modes of travel, signal/road improvements and the discouraging of drive-up windows at new development within the central city area. These policies would further reduce carbon monoxide levels, possibly causing earlier attainment of the state and federal standards within Vallejo.

3. Regional Air Quality

Future development within Vallejo would impact regional air quality. The effect of development would be both direct and indirect. Direct impacts are those related to emissions released on-site from stationary sources. The direct emissions attributable to residential uses are from space and water heating, fireplaces, paints and solvents, lawnmowers and volatile consumer products. Direct emissions from residential uses are difficult to predict and are considered less significant than emissions associated with automobile travel.

Future industrial growth within Vallejo would also generate direct and indirect emissions. Depending on the nature of the industrial development, this land use could be a source of criteria pollutants, primarily hydrocarbons, oxides of nitrogen and particulates. The number, type and strength of any eventual new pollutant sources

cannot be predicted. New stationary sources of air pollutants would be required to obtain permits from the Bay Area Air Quality Management District.

There are approximately 150 - 200 acres of undeveloped land in the City of Vallejo which is currently zoned for industrial use, although industrial "pockets" are scattered throughout the city. The major industrial areas in Vallejo are located in: the Northgate area; the northwest section of the city in the vicinity of State Highways 29 and 37 (Sonoma Boulevard and Marine World Parkway); in the southwest portion of the city near the intersection of Sonoma Boulevard and Solano Avenue in and around the South Vallejo Business Park; and on Mare Island.

Since the City of Vallejo's zoning code allows for commercial office and retail uses in the Intensive Use and Intensive Use - Limited (industrial zones), Planned Development Industrial, and Mixed Use Planned Development districts, it is anticipated that a portion of the available land will be used for non-industrial uses. When land is developed for industrial purposes the City would prefer to see industrial uses which generate a minimum of pollutants and hazardous material while also generating the maximum number of job opportunities.

Proposed industrial projects area reviewed under the City's Site Development, Conditional Use and/or Planned Development permit procedures. These procedures include an environmental review of the project which is used to identify pollutant related impacts and possible mitigation measures, as required by the California Environmental Quality Act (CEQA). Potential impacts on sensitive receptors and/or residential areas would be identified at that time. Project plans area routinely routed to responsible agencies such as the Bay Area Air Quality Management District (BAAQMD) for review.

Figure 17

Indirect Emissions from Expected Vallejo Development, 1985-2010, in pounds per day

	Pollutant			
	ROG	CO	NOX	PM-10
Vallejo Development (2010)	990.2	9758.5	1948.5	3736.0
County-Wide Emissions	66,800	269,600	60,400	62,400

ROG = Reactive Organic Gases (Hydrocarbons)
CO = Carbon Monoxide
NOX = Oxides of Nitrogen
PM-10 = Particulate Matter (10 micron)

Future development within Vallejo would have an effect on air quality outside Vallejo itself. Trips to and from Vallejo would result in air pollutant emissions over the entire Bay Area transportation network. To evaluate emissions associated with expected Vallejo growth, the URBEMIS-2 computer program, developed by the California Air Resources Board, was applied in 1988 to incremental development expected by the year 2010. The daily increase in regional emissions is shown in Figure 17 for hydrocarbons and oxides of nitrogen (two precursors of ozone) and for suspended particulate. County-wide daily emissions from automobiles are also shown.

The effect of the implementation of the Air Quality Element would be a reduction in regional emissions from those shown in Figure 17. The amount of reduction can only be roughly estimated, as the effectiveness would depend on how aggressively and consistently the policies within the Element are enforced during the environmental review process for future developments. Reductions in future emissions on the order of 10 percent can be reasonably expected. Of this, Transportation Systems Management would account for over half the anticipated emissions benefits.

A reduction of 10 percent in the incremental air quality impact of future development in Vallejo would not in itself result in a measurable improvement in regional air quality since growth in Vallejo represents a small fraction of regional growth. However, reducing emissions from indirect sources is an important strategy in the regional planning to attain the state and federal ambient air quality standards in the Bay Area.

4. Transportation

The roadway network and transit systems that provide transportation throughout Vallejo are described in Chapter IV.

D. TRANSPORTATION SYSTEMS MANAGEMENT PROGRAMS

1. Transportation Systems Management Ordinance

In the late 1980's, the State passed legislation directing the regional air quality management district to work with major employers (those having 100 or more employees) to reduce he number of single person commute trips. In 1992, the City adopted a revised TSM ordinance, proving in part that the City would cooperate with the San Francisco Bay Area Air Quality Management District and attempt to comply with State standards.

2. Congestion Management Plan

As required by State law, the Solano County Congestion Management Agency (Solano Transportation Authority) works with the Metropolitan Transportation Commission (MTC) to analyze the existing transportation patterns, identify transit needs and coordinate with the various agencies involved with the permit process.

3. Park-and-Ride Facilities

Fringe or corridor parking facilities with or without express transit service can contribute significantly to reduce automobile use in congested areas during peak periods. In the case of the City of Vallejo, the park-and-ride facilities are located next

to the I-80 corridor and are designed to reduce the number of San Francisco-bound automobiles. There are three park-and-ride lots located within Vallejo city limits, all of which are managed by Caltrans. The existing size and use of those facilities are presented in Figure 18 below.

VTL offers express service from the Lemon Street park-and-ride lot to the El Cerrito del Norte BART station. Service is provided every fifteen minutes during the peak periods, and every thirty or sixty minutes during the off-peak.

The 1995 Solano Intercity Transit Concept Plan, prepared by the Solano Transportation Authority, states that countywide the park-and-ride lots operate at or near full capacity. The City surveyed the three existing lots in May 1996 on a Monday morning to determine usage, and the results are shown in Figure 18. Parking overflow can exist at two of the lots at different times (Lemon Street and Magazine Street) with additional vehicles parking on adjacent streets.

The City of Vallejo has already selected a site for a new 200-stall park-and-ride facility on Columbus Parkway, near I-80. Another facility will be constructed with improvements to the American Canyon Interchange. Caltrans does not have any plans for additional or expanded facilities in Vallejo, however, a new 500-700 stall lot, located at the Red Top Road interchange, is expected to be opened by the end of 2000.

Figure 18

Existing Park-and-Ride Facilities

Location	Size	Occupancy	
Lemon St. @ Curtola Pkwy.	420 stalls	329 autos	78%
Benicia Rd. @ Laurel St.	16 stalls	1 autos	6%
Magazine St. @ Lincoln Rd.	28 stalls	19 autos	68%
TOTAL:	464 stalls	349 autos	75%

E. ANALYSIS OF TRANSPORTATION SYSTEMS MANAGEMENT

The Air Quality Element policies reflect the interrelationship of transportation and air quality. Strategies to reduce automobile travel and improve traffic flow (and air pollution emissions) are known as Transportation Systems Management (TSM).

TSM is a broad concept covering a variety of physical, operational, regulatory, and managerial actions that can be quickly and inexpensively designed and implemented to improve the use and performance of transportation facilities. They include a wide range of transportation improvements from basic traffic engineering to a variety of transit improvements, parking strategies, and pricing policies.

The large number of TSM actions can be grouped into four major classes depending on how each action affects the transportation supply and/or automobile demand in an urban area. Those action classes are:

- Class A: actions which reduce demand for vehicle travel (carpool and vanpool)

  . Encourage ridesharing (carpool and vanpool)
  . Transit marketing
  . Express bus / park and ride
  . Local transit route and schedule improvements
  . Paratransit systems
  . Bicycle and pedestrian facility improvements
  . Pricing (reducing taxes, tolls, fees or fares for High Occupancy Vehicles, HOVs, or increases for single passenger autos)
  . Work rescheduling (four-day work week)

- Class B: actions which enhance highway supply (improve traffic flow)

  . General traffic engineering
  . Freeway traffic engineering
  . Truck restrictions and enhancements
  . Work rescheduling (staggered hours and flexible time)

- Class C: actions which reduce demand and degrade supply

  . Preferential treatment for HOVs (take-a-lane)
  . Auto restricted zones
  . Off-street parking supply reduction

- Class D: actions which enhance supply and reduce demand

  . Preferential treatment for HOVs (add-a-lane)
  . On-street parking restrictions

If emissions reduction is the predominant goal of the TSM actions, as is the case in Vallejo, then Class A actions should receive highest priority since these actions tend to both reduce the Vehicle Miles of Travel (VMT) demand and reduce travel time. Class C actions should receive next highest priority since these also reduce VMT, although at the possible degradation of travel time, user cost, and freedom of choice. Class D actions are less desirable since they would only affect travel time and VMT by marginally small amounts. Finally, Class B actions are conceptually less desirable since substantial VMT demand increases would be accommodated. The TSM programs already in effect in the City of Vallejo at this time are predominantly Class A types, with some Class B actions.

Potential orders of magnitude of areawide impacts of TSM actions, as shown in Figure 19, are based on research done by the U.S. Department of Transportation. The impacts estimated are the orders of magnitude possible through maximum application deemed feasible for each action over the intermediate term future (approximately five to ten years). The study is focused on percent change in Vehicle Miles of Travel (VMT) due to those TSM actions with a higher potential in the City of Vallejo.

Figure 19

TSM AREAWIDE IMPACTS
PERCENT SHIFT IN VEHICLE MILES OF TRAVEL

TSM Action	Work	Non-work	Total
Ridesharing Encouragement (carpool, vanpool, pref. parking)	-3.0	+0.5	-1.0
Park-and-Ride (with express bus)	-1.0	+0.2	-0.3
Four-day work week (5% areawide participation)	-1.0	+0.5	Negligible
Variable work hours (20% areawide participation)	-0.5	Negligible	-0.2
HOV preferential treatment	-0.6	+0.2	-0.1
Combined Actions	-6.1	+1.4	-1.6

Given the employment characteristics of Vallejo, mentioned in the previous sections, combined with its location next to the I-80 corridor, the TSM actions more likely to be implemented in the City include: ridesharing encouragement, park-and-ride facilities, transit system route and schedule improvements, work rescheduling, and preferential treatment for HOV.

Figure 19 indicates that TSM actions can potentially shift the areawide VMT by more than six percent for work trips and about two percent for all trips. Ridesharing appears to have the greatest potential, contributing about half the total impact of the combined TSM actions. The actions presented above focus on shifting commuters from drive-alone to higher occupancy modes of travel. As a consequence, non-work travel will tend to increase because of increased home-based auto availability during the day, diluting work-trip VMT reduction.

Although impacts shown in Figure 19 are presented as point estimates, they represent midpoints of a range of possible maximum impacts, generalized across the range of American cities. Furthermore, individual cities have specialized characteristics which cause strategy impacts and interrelationships between measures to vary somewhat from city to city. In the case of Vallejo the range of achievable impacts is heavily constrained by its location next to the I-80 corridor, the type and size of the employment, and the strong interrelation to the San Francisco/Oakland area. Implementation of a high-quality TSM program in Vallejo would be heavily dependent on similar efforts carried out by other cities along the I-80 corridor.

The City of Vallejo is expected to grow significantly in the next ten to fifteen years, in population, housing and employment. Due to that growth, there would be an increase in commute trips in the future. Although employment would grow at a faster rate than population or housing, only a six percent decrease from the current levels of commuter trips outside the

area is expected. Primary destinations outside the Vallejo/Benicia area would be the San Francisco Central Business District, Central Contra Costa County, and Richmond.

The increased commute congestion would be mitigated in part by some of the roadway improvements mentioned previously in this report. It should be noted however that not all those improvements are committed at this time and some of them face serious financial and environmental problems. Furthermore, even if all those improvements were built, some areas in Vallejo such as the approaches to the Carquinez bridge would still experience severe congestion for one hour or more, during the peak periods.

The previous analysis of a range of TSM actions indicated that those programs would improve transportation conditions in Vallejo, especially for commuters during peak periods. Concerted application of the proposed TSM actions can potentially reduce areawide demand on the order of six percent. However, for the impacts to reach the orders of magnitude indicated, a continuing and closely monitored TSM program would be required.

In the case of the City of Vallejo the reductions in VMT would probably be less than the maximum indicated above because of the relatively low number of employers with 100 employees or more, which would limit the effectiveness of a ridesharing encouragement program, the potentially most effective TSM action.

Air Quality Goal 1: To improve Vallejo's air quality.

Policies:

1. *Develop a more balanced transportation system in Vallejo that provides opportunities for non-auto travel through promotion of pedestrian, bicycle and transit modes of travel.*

2. *Balance jobs and housing in future development to provide Vallejo residents the opportunity to work within Vallejo, and reduce long distance commuting both to and from Vallejo. Jobs and housing should be balanced both in numbers and in salary range/housing cost.*

3. *Reduce carbon monoxide levels in downtown Vallejo through promotion of Transportation System Management for new development, the promotion of bicycle, pedestrian and transit modes of travel in new downtown development, and signal/road improvements that reduce vehicle idling. New drive-up windows should be discouraged in new development in the central city area unless it can be demonstrated that there will be no net increase in carbon monoxide (CO) emissions.*

4. *Promote the use of trees and plants in landscaping to reduce air pollutant levels.*

5. *Encourage local businesses to hire local residents in order to minimize commute trips and vehicle miles traveled in the region.*

Air Quality Goal 2: To reduce the air quality impact associated with future development in Vallejo.

Policies:

1. *Promote high density development and infill development in those portions of Vallejo served by transit.*

2. *Promote mixed land use development. The provision of commercial services such as day care, restaurants, banks and stores near to employment centers can reduce auto trip generation by promoting pedestrian travel. Providing neighborhood commercial and park uses within residential developments can reduce short auto trip generation by making pedestrian and bicycle trips feasible.*

3. *Require air quality mitigation for new development not amenable to TSM methods. Retail commercial and residential development, in particular, do not lend themselves to trip reduction through TSM. As part of the environmental review process these types of uses should be required to provide air quality mitigation by providing funding for off-site improvements to improve air quality. Examples of such improvements are pedestrian/bicycle amenities, transit support, transit amenities such as bus shelters, or additional park-and-ride lots.*

4. *Use project siting to reduce air pollution exposure of sensitive receptors. Locate air pollution sources away from residential areas and other sensitive receptors. Include buffer zones within residential and sensitive receptor site plans to separate these uses from freeways, arterials, point sources and potential sources of odors.*

Air Quality Goal 3: To make a contribution towards improving regional air quality.

Policies:

1. *Cooperate with regional air quality planning agencies such as the Bay Area Air Quality Management District, Metropolitan Transportation Commission, and Association of Bay Area Governments in the development and implementation of regional air quality strategies.*

2. *Support the expansion and improvement of regional transit systems, ferry systems and regional ridesharing programs.*

3. *Evaluate the possible implementation of various programs designed to improve air quality such as the creation of "urban forests", and decreasing the use of products which release chloroflourocarbons (CFC's).*

4. *Encourage energy conservation measures in all new development and energy conserving retrofitting of existing buildings wherever feasible.*

XI. NATURAL RESOURCES

A. WATER RESOURCES

Mean annual runoff data from the San Francisco Bay Region has been recorded by the U.S. Geological Survey. Using a 40-year period, 1931 to 1970, the values range from 3.0 to 3.5 inches per year. Despite the low runoff, there has been much upstream erosion, as evidenced by the sand and silt in the drainage culverts.

Development of the planning area will add to the cumulative impact of increased runoff and erosion potential will increase, causing siltation problems downstream.

The change in land use from grazing to urban uses will change the existing water quality. The removal of 50 percent of the present animal population will decrease organic contaminant; however, land development will increase contaminants associated with urban environment, such as chemical fertilizers, herbicides, and pesticides. The consequence of these pollutants will be minimal as has been shown in other urban residential areas. However, the ultimate cumulative effect of large scale areawide development may be harmful to downstream water quality in the future.

Water Resources Goal: To protect the city's water resources against pollution and wasteful use so that it will be available for the city's future needs.

Policies:

1. *Retain major drainage swales, particularly those indicated as blue line streams on U.S. Geological Survey Maps.*

2. *Protect watershed areas, particularly the area north of Lake Herman, in conformance with the policies and ordinances of the City of Benicia.*

3. *The City should actively encourage conservation of water through reduced per capita consumption.*

B. FISH AND WILDLIFE RESOURCES

Within the planning area there are five distinct floral communities. The largest area consists of grassland and is found throughout the area. The other floral communities are found in specific locations.

Creek vegetation is associated with the constantly wet soils and muds of creeks and minor drainage channels. The woodlands usually consist of eucalyptus groves, and in some locales oak trees and associated grasses are found. Along the western side of Mare Island bordering San Pablo Bay and along the southern boundary of the city bordering the Carquinez Strait and in Glen and Elliot Coves the vegetation is typical of waterfront, bay muds, and salt marshes.

The creek, woodland, waterfront, and domestic vegetation communities support intensive biotic habitats. These communities are, therefore, important in maintaining ecological equilibrium.

The most common vegetation associated with the grasslands are tarweed, storkbills, thistle, barley, wild oat, and small rattlesnake grass. In the creek areas the most common vegetation is buckeye, red willow, California bay laurel, California rose, cattails, horsetails, water hemlock, mint, watercress, sneezeweed, and bermuda grass. The most common trees in the woodland are eucalyptus trees and occasionally oak trees. Along the waterfront and in the bay muds and salt marshes one would find cordgrass, pickleweed, assorted flowers, hedges, bushes, fig trees, apple trees, weeping willow trees, oaks, elms, and eucalyptus trees.

Special status plant species can be found in the planning area. (Special status means species are considered rare, threatened, endangered, or of special concern.) Examples of these can be found in the White Slough areas, and include Marin knotweed and Mason's lilaeopsis. On Mare Island, there is evidence of these same species as well as marsh gumplant, delta tule pea, and delta mudwort.

The areas subject to future development will, once developed, affect all four existing natural communities -- the grassland, creek, woodland, and waterfront communities. Most of the existing vegetation will be stripped away and will be replaced by graded and filled soils, and for the most part, relandscaped with common garden flora.

Overall impact caused by development of the planning area will not be significant in terms of its effect on areas left undeveloped. Perpetuation of these undeveloped areas is more dependent upon climate, soils, and faunal grazing habitats.

Although the vegetative cover appears to be sparse, the animal population is abundant. Woodland, creek, waterfront, and domestic areas can support large numbers of wildlife because they supply the necessary water, food, shelter, and protection from wind, rain, heat, cold, and predators.

Many animals are not confined in their search for food to a single floral community; however, most animals associated with creek and waterfront communities can only survive in those locations. Similarly, salt water vertebrates are restricted to salt water communities.

Many animals and insects (birds, foxes, raccoons, coyotes, and butterflies) are widely distributed throughout the area. They are dependent upon established equilibriums to maintain their place in the food chain pyramid. For some animals the project site is used semi-annually during migrations depending upon climatic and food source conditions.

A number of special status animal species can be or have the potential to be found in the planning area. In the White Slough area, examples of these species include: salt marsh harvest mouse, American peregrine falcon, California clapper rail, western snowy plover, black rail, delta smelt, pond turtle, Suisun ornate shrew, California brown pelican, California least tern, salt marsh yellowthroat, San Pablo song sparrow, and Sacramento splittail. On Mare Island, in addition to those listed above, examples include: longfin smelt, green sturgeon, loggerhead shrike, tricolored blackbird, Suisun song sparrow, great blue heron, long-billed curlew, western big-eared bat, and burrowing owl.

Areas of biological significance include Knight Island, San Pablo Bay, and Napa River Marsh. Knight Island is a large salt pond contained with a levee. This and all other salt ponds in this area provide important resting and feeding areas for wintering waterfowl and shorebirds. The

ponds are particularly important during high tides to thousands of shorebirds, waterfowl, gulls, white pelicans, and other birds. San Pablo Bay provides critical feeding areas for tens of thousands of wintering shorebirds. It is the wintering grounds for an estimated 70 percent of all canvasback ducks in the entire Pacific Flyway. The San Pablo Bay National Wildlife Refuge claims some 6,000 acres in Vallejo and unincorporated Solano County, extending south of State Route 37 into the bay.

The Napa River Marsh is one of the most important remaining estuarine and marine habitats in the San Francisco Bay System. River marshes provide habitat for innumerable species which make up a vast biosystem. Any major intrusion of human activity in this area could seriously disrupt the ecological balance of the marsh system and result in severe environmental impacts. The White Slough area between the Napa River and State Route 37 is on the floodplain and is not suitable for intensive development; and because of the recent discovery of the endangered salt marsh harvest mouse on this property and its potential as a nature study area, the area has been designated "wetland" and should be zoned so as to require approval for all uses, as discussed in the White Slough Specific Area Plan.

Numerous species are distributed throughout North and South San Francisco Bay and San Pablo Bay. Reduced freshwater flows allow saline water to move upstream in summer when many marine species enter the Carquinez Strait and Suisun Bay. Every anadromous fish that spawns in the Sacramento River System passes through Carquinez Strait, including entire spawning populations of striped bass, sturgeon, steelhead, salmon, and shad. Since half of the waters of the State flow through the Strait, it is extremely sensitive as a marine habitat. Severe reduction in water quality in this area could eliminate an entire marine population.

Preservation of the Napa River Marsh system is not only essential from a wildlife point of view, but for recreational and economic reasons as well. Water-associated recreation on the Napa River is expected to increase substantially in the future. Thousands of man-days are already expended each year hunting and fishing this area, supporting numerous related business activities.

New development will have a significant adverse impact on all faunal communities which presently inhabit the planning area. All levels of the food chain pyramid will be subjected to a more intensive fight for survival. Small animals and animals confined to their biotic communities will be approximately 50 percent destroyed. Large animals which can migrate to new habitat areas will have to do so. However, owing to habitat and food source conditions in the surrounding areas, it is probable that approximately 90 percent of the newly arriving animals will not survive their first year after migration because of the survival threat they present to residential population equilibrium.

The continued encroachment of human activity and household pets will cause animals to leave even undeveloped areas. Additionally, with increased human activity comes increased levels of toxicants and pollutants which will have a severe adverse effect on the animals that continue living near the new development.

Fish and Wildlife Resources Goal: To protect valuable fish and wildlife habitats.

Policies:

1. *Cluster units so that more open space areas are left in a natural state.*

2. *Landscape parks, water tank sites, creek channels, and other infrastructure with vegetation associated with the area to mitigate destroyed habitat area.*

3. *Designate areas valuable for scientific study, such as the Hunter's Hill area, as open space land use.*

4. *Protect valuable or unique fish and wildlife habitats through control of coastline development, upgrading of effluent levels and requiring use permits for all development along the critical areas of the Napa Marsh lands.*

5. *Recognize areas valuable for marine life production, particularly the Napa Marshes and Carquinez Strait, and work with the California Department of Fish and Game and Bay Conservation and Development Commission in insuring the protection of these areas from incompatible uses.*

C. ENERGY RESOURCES

Gas and electrical energy is provided by the Pacific Gas and Electric Company. According to PG&E, average annual consumption rates in Vallejo are 600 therms per household for gas and 5,566 kilowatt hours per household for electricity.

Vallejo's climate provides opportunities for both solar and wind energy application. PG&E and private developers have shown an interest in wind energy generation on the hills between Vallejo and Fairfield. The City plans to tap hydroelectric energy from the City's major water distribution line. By awarding bonus density, the City encourages use of solar energy systems in new construction in accordance with the State subdivision review provision and the Solar Rights Act of 1978.

Owners of both new and old housing units can benefit from resource conservation techniques. New technology involving renewable resources together with conservation practices can reduce the cost of maintaining a home.

Energy Resources Goal: To reduce the City's dependence on non-renewable energy resources through conservation and development of renewable energy sources.

Policies:

1. *Support energy efficient modes of transportation through land use planning, including mixed use development, improved pedestrian and bicycle access, and more compact site planning.*

2. *Encourage wind and solar energy development.*

3. *Encourage participation in the PG&E programs for reducing energy consumption.*

4. *Pursue development of cogeneration, hydroelectric, and wind generation facilities.*

5. *Housing units should be sited to take advantage of passive solar heating techniques; where this is not possible, overhangs should be required on east, south, and west elevations. Energy and water conservation features should be encouraged.*

D. MINERAL RESOURCES

California is one of the leading mining states in terms of both value and diversity of the minerals produced. To protect these valuable resources, the State amended its Surface Mining and Reclamation Act of 1975 (SMARA) to include a mineral lands inventory process termed "classification-designation". The purposes of this process are to provide local agencies with information of the location, need and importance of mineral resources within their jurisdiction, and to insure this information is used in local land use decisions.

The first step in the process is classification. This is an inventory undertaken by the State that includes identifying the market area of a mineral commodity, projecting the future need of the commodity, and geologically classifying the presence of the commodity. The second step is the designation of those classified deposits that are of regional and statewide importance. The purpose of designation is to identify those deposits is to identify those deposits potentially available and able to meet the mineral resource needs of a particular region.

The first mineral commodity that has been classified and designated is construction aggregate-sand, gravel, and crushed rock. All areas of importance that contain this commodity within the North San Francisco Bay region have been identified, and one of these is within Vallejo's Sphere of Influence. A deposit of greenstone and graywacke of the Franciscan Complex form, which has been classified as having value for crushed stone, has been identified at Sulphur Springs Mountain. A portion of this deposit lies on the eastern side of the city's sphere, and is more commonly known as the Lake Herman Quarry or Syar Industries Quarry. (While the general location of the deposit is identified as Sectors 3 on SMARA Designation Map No. 85-5, North San Francisco Bay Plate 13.)

This deposit has been designated for three reasons. First, it is a significant source of construction aggregate. It is estimated by the State that within the 635 acres of the designated sector, there are 413 million tons of aggregate. This amount makes the deposit one of the largest in the North San Francisco Bay region. Second, with its proximity to Interstate 80, I-680, I-780, and State Routes 29 and 37, the deposit is readily available to the construction market, a market that is rapidly expanding in the region. Finally, while the area is undeveloped with urban uses, this deposit potentially will be under pressure from other land uses competing for land in this area. For these reasons, it has been determined this deposit should be preserved and protected as a significant mineral resource.

The City agrees with this determination. This quarry has long been an important industry in the southern Solano County area. As a regional land use, it should be maintained for its economic contributions to the area. As a significant mineral resource, the deposit should be protected from pressure in the area that is proposed within its corporate boundaries, and will work closely with Solano County to monitor development proposals beyond these boundaries to protect these resources.

Mineral Resources Goal: To preserve designated mineral deposits of regional and statewide importance within Vallejo's adopted Sphere of Influence.

Policies:

1. *Show the boundary of the designated sector for the Lake Herman Quarry on all maps and development plans that include the area within a minimum of one mile of the sector boundary.*

2. *Discourage the development of incompatible land uses in and within one-half mile of the designated mineral resource area. These uses include the following: low, medium and high density residential; public facilities such as schools and hospitals; intense light and heavy industrial not related to quarry operations; general commercial; and office.*

3. *Encourage the development of compatible land uses in and within one-half mile of the mineral resource area. These uses are generally low traffic generators and include the following: rural residential; industrial related to the quarry operations; recreation, such as golf courses; agricultural; and permanent open space.*

4. *If the designated mineral resource area is annexed to the City of Vallejo, a "Mineral Conservation" overlay zoning district and ordinance and reclamation plan should be implemented by the City.*

XII. ACTION PROGRAM

A. KEEPING THE PLAN UP TO DATE

Adoption of a general plan should be followed by a series of further steps, discussed below, which collectively will make these elements effective in guiding the development of Vallejo. Biennial review will ensure a General Plan that reflects new constraints and opportunities.

B. SPECIFIC AREA PLANS AND SPECIAL STUDIES

The City has used specific plans and area plans to further study certain areas. Beside the five area plans completed in the late 1970's, specific plans have been prepared for Sky Valley, Northgate and White Slough. A specific plan and area plans will be prepared for Mare island. An area plan was prepared for the Tri-City and County Cooperative Planning Area for Agriculture and Open Space.

C. ENVIRONMENTAL REVIEW

Since 1972, the State has required environmental review of projects to ensure that consideration is given to preventing environmental damage. Guidelines governing the review process stipulates that when a project is found to have a significant adverse impact on the environment, the agency approving the project must provide mitigation of these impacts or make findings that there are overriding social and economic considerations. This has resulted in projects that are more sensitive to the environment.

D. ECONOMIC IMPACT ANALYSIS

A new computerized model is now available for use by local agencies through the Association of Bay Area Governments. The model is called CRIS, which stands for Cost Revenue Impact Study. The purpose of the model is to provide information on the cost of providing urban services and the amount of revenue that will be generated through taxes and fees. This model, or something similar, should be employed by the City as supplemental information to be used in conjunction with the required environmental analysis. All Specific Area Plans should have economic studies included as part of the analysis.

E. ZONING

A zoning ordinance based on the General Plan is the single most important means of translating the Plan's proposals into reality. A zoning ordinance regulates use of the land, population densities, and such items as land coverage, heights of structures, and off-street parking requirements. The ordinance consists of a map showing the various land use districts and a set of regulations, standards and administrative procedures.

F. SUBDIVISION REGULATIONS

A subdivision ordinance regulates the development of private lands by prescribing standards for street and lot design in new subdivisions. Modern subdivision law may also require that sites be reserved for schools and necessary public areas, that natural assets of the land be conserved, and such other items as the planting of street trees. A subdivider is free to submit any design for the layout of a subdivision that conforms to the General Plan and the standards prescribed by the ordinance, but the Planning Commission may require that changes be made to gain a more workable plan or a better working subdivision. Specific features of the General Plan can be accomplished through the process of subdivision review and approval. For example, as new areas are subdivided, all levels of the streets which are shown on the General Plan can be accomplished through the process of subdivision review and approval.

G. CAPITAL IMPROVEMENT PROGRAMMING

A Capital Improvement Program is a six year schedule of needed public improvements, arranged according to priority. The program usually separates projects for the first year and those proposed for the succeeding five years. Costs and sources of financing are usually indicated. The Planning Commission reviews the programs to determine whether the projects are in conformity with the General Plan. The Commission may also suggest additional projects. In order to avoid duplication or conflict, it is also desirable that all public agencies, including the school district and other special districts, submit their capital improvements projects in the area for review. The first year's program is recommended to the legislative bodies for inclusion in the annual budgets. The schedule is revised annually, another year's program is added, and the Planning Commission screens the proposals again.

H. POLICY DECISIONS

Policy decisions should all be made in light of the General Plan. This does not mean that public policy is frozen by the Plan, or that it cannot change from time to time. But the General Plan should be an important part of policy making. For example, the General Plan reflects Vallejo's decision to strengthen its downtown and its wish to make it the heart of the city; then the decision on where to put any major retail commercial centers should be made in light of this policy.

I. REFERRALS

State planning law requires that land purchases and development programs by special districts, City departments, and the County be referred to the Planning Commission to determine conformity to the adopted General Plan. This process makes sure that projects will be coordinated with each other and with an overall plan.

J. PLAN LINES

Plan lines are an indication of an official map showing where future streets will be needed. When precise alignments for streets shown on the General Plan have been determined by engineering studies, plan lines should be established to prevent buildings from being constructed in future street rights- of-way. The plan lines also serve as reference lines from which to measure required site areas, setbacks, and required yard spaces.

K. MANDATORY DEDICATION

This is a method by which the governing body can require that a portion of land be dedicated to public purposes as a prerequisite to development. Both Solano County and the City of Vallejo acquire parkland through Park Dedication Ordinances.

L. EASEMENTS

Easements are a particularly useful tool in providing needed public rights-of-way when outright acquisition would be infeasible or unnecessary. Easements provide the public with the rights to certain uses of land, without actual ownership. The property owner may be compensated for the restrictions placed on his land. Prime examples are public utility and highway easements.

The Public Resources Code states that counties and cities must require reasonable public access to and along a public waterway, river or stream, prior to approval of any proposed subdivision fronting on a public waterway.

Existing private utility easements also offer additional potential for hiking, biking, and pedestrian trails to serve as corridors between various open space and recreation complexes and should be considered as an important element in the development of an overall park, recreation, and open space framework.

M. PUBLIC INFORMATION

An adopted General Plan informs the citizen how the community proposes to guide development. The merchant knows where he or she can expect enough customers to support his or her business. The prospective home buyer knows whether his or her neighborhood will be protected from through traffic and whether it will be served by schools and play areas. If this plan makes sense to private land owners, their development activities will help carry it out. By demonstrating needs, the General Plan can do much to convince the community that street improvements, recreation facilities, or public facilities are required. Public information on the General Plan helps promote public action in support of City goals.

N. ANNEXATION

In order to insure orderly development and to eliminate administrative problems on providing police and fire protection and other services, annexation would be necessary as undeveloped areas are developed. Areas to be annexed should have Specific Area Plans prepared indicating how public services will be provided and giving more detail on the proposed road system and the economic impact of the proposed development. The City should investigate the usefulness of a computerized model for determining economic impact of any and all development to be within the city limits.

O. GROWTH MANAGEMENT

Vallejo may choose from a varied assortment of growth management techniques in order to pursue its fiscal, environmental, social, and economic objectives. The application of any one technique in pursuit of an objective may cause conflicts with other broader community goals.

These conflicts should be anticipated, and in many cases they can be mitigated by a combined use of several growth management techniques. For example, density bonuses may be utilized to stimulate low income housing development when downzoning to preserve residential character produces a negative site effect of raising housing costs beyond the reach of potential low-income residents. The following list describes those growth management techniques which are being used or could be used in Vallejo:

Planning Programs

- General and Specific Area Plan Policies: growth management tools include setting densities, geographic limits, phasing of new growth, service availability standards, environmental quality standards, social balance standards;

- Zoning Regulations: large lot zoning to protect environmental resources and preserve agricultural land, urban downzoning to protect existing neighborhoods, density incentives;

- Subdivision Review: review subdivisions to ensure availability of urban services, including sewer, water, schools, and public safety.

Expenditure Programs

- Land Acquisition: through use of eminent domain, purchase of surplus government property, or other private land;

- Capital Improvements Programming: to manage growth instead of with the sole intention of meeting market demand;

- Housing Subsidies: the housing element provides a framework for use of housing subsidies including rent supplements, leasing programs, and rehabilitation funds;

- Community Promotion: by limiting all promotion or promoting only certain types of development (e.g., commercial and industrial).

Taxation Policies

- Impact Taxes and Fees: Assessments against a developer to cover the cost of a project that would otherwise be borne by the local government;

- Preferential Assessment: instead of taxing property at its "highest and best use", land is assessed only at its present resources production income value. To allow preferential assessment, an enforceable restriction must be imposed on the property which prohibits higher uses. Examples are Williamson Act contracts, scenic restrictions, and open space easements. Prior to the Jarvis-Gann tax measure, this technique has much greater impact on lowering taxes.

P. STATE AND FEDERAL PROGRAMS

Several programs are currently used by the City to provide low and moderate income housing to Vallejo residents, to prepare Neighborhood Development Plans for target neighborhoods, and to master plan and install public improvements in the South Vallejo Industrial Park.

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